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ABSTRACT

The conference provided an opportunity for nutritionists and workers in allied professions at the local, State, and national levels to come together to identify and consider effective techniques for working with youth in the development of food habits. Participants raised and explored some of the youth-oriented problems related to nutrition, identified some of the effective ways of working with youth and the adaptability of these programs to a variety of district problems, and discussed ways in which youth-oriented nutrition programs might possibly be initiated and financed. Specific presentations concern the values, life styles, eating habits, and health of youth today; adolescent growth and development; and responsibility for developing the dietary habits of youth. In addition, ideas for nutrition education, programs, actions, and techniques are presented by Federal, school, industry, and voluntary agency representatives. (Author/MLF)

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Proceedings of

NATIONAL NUTRITION EDUCATION CONFERENCE

November 2-4, 1971
Washington, D.C.

THEME:
Youth—Nutrition—Community

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In July 1972 the Agricultural Research Service, United States Department of Agriculture, was reorganized and the names of the Divisions changed. The reorganization has not been reflected in this publication because of the additional expense that would result at this time as well as the delay in publishing the proceedings.

FOREWORD

The theme of the National Nutrition Education Conference held in Washington, D.C., November 2–4, 1971, was Youth—Nutrition—Community, the high school-aged youth and nutrition in his community—time for involvement and change. The objectives of the Conference were:

1. Look at youth today—his values, life styles, eating habits, health.
2. Look at youth in his environment—physical, biological, social.
3. Identify effective ways of working with youth in providing support in the development of his food habits.

This Conference was the sixth in a series of national nutrition conferences. The first, a White House Conference, was called by President Roosevelt in 1941 to formulate a national program of action. The second, held in 1952, reviewed progress and planned ways to strengthen existing nutrition programs. The last three, held in 1957, 1962, and 1967, like the one being reported here, focused on some aspects of nutrition education as a means of improving the food habits and nutritional status of the American people.

We hope that the proceedings of this Conference will be useful not only to the participants who attended the sessions but also to those persons concerned with nutrition education who have contact with the participants and to the readers of this report. An opportunity was provided at the Conference for participants to discuss possible solutions to nutrition problems in their own State or region of the country and to make plans for followup action. The reader's attention is directed towards the summarized report of the plans developed by the participants as they discussed the following three questions:

1. What are some of the *problems* related to nutrition that have been identified at the Conference as of concern to youth?
2. What are some of the *ways of working* with youth that have been identified at the Conference which you believe will be effective if adapted to your area?
3. How can we *initiate* nutrition programs directed towards youth and how can we *finance* these programs?

These questions may be of value to the reader in reviewing his program activities and providing a focus for future activities. Nutrition education is a continuing process.

ROBERT L. RIZEK, Ph.D.
Director
Consumer and Food Economics
Research Division
Agricultural Research Service

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The opinions expressed by the participants appearing at this Conference are their own and do not necessarily represent the views of the U.S. Department of Agriculture.

Italic numbers in parentheses refer to References at the end of each paper. The data presented in the references, figures, and tables are reproduced essentially as they were supplied by the author of each paper.

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PROCEEDINGS OF THE NATIONAL NUTRITION EDUCATION CONFERENCE

INTRODUCTION

The National Nutrition Education Conference held in Washington, D.C., November 2–4, 1971, was sponsored jointly by the U.S. Department of Agriculture through its Nutrition Programs Service Unit, Consumer and Food Economics Research Division, Agricultural Research Service, and the Interagency Committee on Nutrition Education (ICNE).

The Interagency Committee is a result of a merger in 1950 of two committees, the Interagency Committee on School Lunch and the Nutrition Planning Committee, both of which had been established by a series of Executive orders beginning in 1936. In 1949, the coordination of Nutrition Programs under an Executive Secretariat had been transferred to the Agricultural Research Service in the U.S. Department of Agriculture. Since that time, this function has been maintained by the Nutrition Programs Service Unit of the Consumer and Food Economics Research Division that funds and provides the Secretariat for the Committee, produces the publication, Nutrition Program News, and maintains communication with the State nutrition committees. The purpose of the Committee is still fundamentally the same as when it was established, and that is to better understand the goals of its 25 member agencies (appendix, p. 89) and their nutrition-related programs and to stimulate efforts to improve the well-being of people through nutrition education and other activities.

Plans for the fifth National Nutrition Education Conference, following the White House Conference, were developed by members of the Interagency Committee on Nutrition Education. Early deliberations were concerned with determining the scope and emphasis of the Conference. ICNE members decided to devote the 1971 Conference to a consideration of the nutrition of youth. It was not to be a conference for youth although youth would be represented on reactor panels. It was to be a conference for professional workers with a major interest and responsibility in nutrition education. The purpose of the conference was to provide an opportunity for nutritionists and workers in allied professions at the local, State, and national levels to come together to focus on youth, their nutrition, and their community.

Participants who directly or indirectly were in a position to influence the eating habits of people were chosen from all sections of the country and from voluntary and private organizations as well as from Government agencies. Invitations were sent to State and city nutrition committees and to selected representatives of Extension Service; public health nutritionists; college and university teachers of foods, nutrition, and education; elementary and secondary school teachers; health educators; food trade associations; professional and service organizations; United Nations; Government agencies; and some research-related groups. Over 400 persons attended the Conference.

The program was planned to provide background information on the status of health and nutrition of our teenage youth and to identify and consider effective techniques for working with youth—ways of becoming more involved and providing support in the development of his food habits.

The luncheon on the final day of the Conference was planned as an integral part of the Conference. It was a working session. Participants were seated according to their State or region of the country and discussed not only their own local scene but also how best to adapt some of the ideas that were presented by speakers.

The speakers at the Conference were from a variety of disciplines concerned directly or indirectly with the nutritional health of youth (appendix, p. 104). The papers that made up the proceedings of the Conference were distributed to participants attending the sessions and are reproduced in this publication. The papers present the speakers' views and are not necessarily those of the sponsoring agencies.

Exhibits of materials from the member agencies of ICNE were on display and a selected list of available publications for teaching and reference was prepared by the agencies (appendix, p. 99). A selected bibliography was compiled by a subcommittee of the Conference Program Committee (appendix, p. 101). Both the list of publications and the bibliography were distributed to participants during the Conference.

Members of the American Dietetic Association who are registered dietitians received 12 hours continuing education credit for participation in the Conference.

Evaluation of the Conference was considered from the time of initial planning for the Conference. Various forms were used during the sessions and plans made for followup evaluation (appendix, p. 89).

WELCOME TO THE NATIONAL NUTRITION EDUCATION CONFERENCE

NED D. BAYLEY, Ph.D., *Director of Science and Education, U.S. Department of Agriculture, Washington, D.C.*

It is a pleasure to welcome this group to the National Nutrition Education Conference of 1971. This Conference is one of a series that began 30 years ago when the first National Nutrition Conference was called by President Franklin D. Roosevelt in 1941. Each conference has focused on some particular aspect of nutrition education. This morning you are beginning to consider together the Nation's young people of high school age—their nutrition in the context of their way of life and how to reach them with knowledge about better food habits.

I am confident that from this consideration will emerge workable ideas about developing and maintaining the nutritional health of our young people. Certainly you bring a wealth of talent to the task. You come from all sections of the country, as well as from the Virgin Islands and Puerto Rico. You represent many different groups—research and education in the social, biological, and physical sciences; public health and medicine; home economics and social service; industry and trade, including the news media.

Such a variety of participants is important to the success of your deliberations. Solutions to the complex problems in nutrition require the sustained collaboration of many disciplines and skills. No single background of training is adequate to do the job involved in learning how to help our youth make the best use of their real and potential food supply in the environment in which they find themselves in the 1970's.

Young people in the 1970's are deeply concerned about their role in setting and attaining goals for themselves and for the Nation. They have innumerable enthusiasms . . . and sometimes the manifestations of their interests confuse us and we find ourselves totally unprepared to cope with them, much as older generations have found themselves since time began.

But enthusiasm, concern, and activity are plus values, demonstrating the life and thought behind them. It is vitally important that we learn to understand and cope with the beliefs and concerns of young people. They are a very real and contributing part of our national scene.

I think the young people of today are the finest generation of American youth that has ever existed. I am glad their beliefs will be directly reflected from now on through the polls. In this way, they will be able to assume more and more responsibility for the selection of our national leaders and for their own total environment. They show remarkable depth of knowledge and creativity in science as well as social areas of concern. Through national youth organizations, they are showing poise and outstanding leadership of their own.

To meet their needs, we must continue to improve the program of nutrition education that will reach all of our youth.

There are many reasons why our nutrition education programs so far have seemed less than effective. Not the least of these reasons is that we seldom hear about our successes . . . only the failures are talked about and reviewed. Sometimes our message has been too confused or too somber, or we have known too little about the goals and values of the people we were trying to reach. Sometimes we have lacked the good sense to ask the young people themselves about improving our programs.

Rapid advances in technology have brought about many changes in our environment and resources, and even our system of values. The number and variety of foods available have increased tremendously so that now there are more opportunities to make poor choices. Emphasis seems to be away from family togetherness, especially from family meals together. There is increased opportunity for individual action and more freedom of choice. And it seems to be part of human nature to disregard nutrition until personal experience illustrates all too graphically the ill effects of poor food habits . . . such ill effects as skin problems and unattractive overweight.

Education, as you know, whether in nutrition or other areas, is a method of thought control. The teachers to a great extent determine the information to which a person is exposed and on which he or she develops thoughts, ideas, beliefs and other bases for action. The dilemma that faces educators in nutrition is that there are a multiplicity of educational efforts competing for the minds of young people. If we are to succeed in obtaining acceptance of what we think are the proper bases for eating habits, we must first realistically appraise our competition. After having done that, we must develop a strategy which will more than match our competition for acceptance of nutrition ideas. I think we all realize that this cannot be accomplished through the usual procedures of parental-teacher lecturing. What we must develop is a means of demonstrating to the young that the "reinforcements," to use a behavioral science term, for adopting good nutrition habits are greater than the competing reinforcements. This is essentially a challenge to develop an educational environment—school, media, home, social, economic, and so forth—in which young people will recognize and give priority to the advantages of good nutrition.

This is the challenge which you will meet in your consideration and planning. On the positive side, you have the benefit of support and increased knowledge relevant to young people and nutrition. Since the last National Nutrition Conference in 1967, two White House Conferences have been held to give impetus to increased action in this area.

The White House Conference on Food, Nutrition, and Health, held in 1969, resulted in many recommendations for the improvement of nutritional health of various age, sex, economic, ethnic, and cultural groups within our population. The White House Conference on Youth, held in 1970, highlighted not only health factors but ecological elements influencing young people and their behavior. In addition, since 1967, several extensive studies have been made to provide more information about health status, especially as it is related to proverty.

THE ATTITUDES, VALUES, AND LIFE STYLES OF YOUTH

William W. Reeder, Ph.D., *professor, Department of Rural Sociology, Cornell University, Ithaca, N.Y.*

In 1916 Dwight Sanderson was 38 years of age, an eminent entomologist with a couple of textbooks in use and the Dean of Agriculture and Director of the Experiment Station of the University of West Virginia. Against the advice of his many professional friends, he decided to leave the field of entomology and his life as an administrator and go back to college to become a sociologist. His reason was that "he knew how to deal with the bugs but that it was the farmers that presented the biggest and toughest challenge in the solution of problems." And so it is also in the field of health, the medical solution though difficult may, in many cases, be easier than getting the patient to do what he should do or getting him not to do what he should not do. By the way, Dwight Sanderson went on to build a sociology department at Cornell University and to become the first President of the Rural Sociological Society.

If you have asked yourself, as I did, why a sociologist appears at this phase of your program to talk about the attitudes, values, and life styles of youth, I think the basic answer is that a large part of many health problems are, in fact, the attitudes, values, and life styles of the patients and the more we know about them, the better we will be able to assist in the solution of their health problems.

Before I address myself specifically to the attitudes, values, and life styles of youth, I should like to provide a framework within which to interpret the remarks I will make. This framework is derived from a 20-year study of the directive factors in the social actions of persons and organizations. Included in those years of research are 21 different field studies in six different cultures. Several of these field studies were about youth or included youth in their samples, and all of the studies were centrally concerned with the attitudes and values of the populations studied.

An outcome of these studies has focused on four important concepts regarding the actions of persons and organizations. Those are variation, consistency, the relevant cluster of beliefs and disbeliefs, and specificity. I will deal first with variation.

Within a community a great deal of variation has been shown to exist as to what people believe, feel, and do on every subject that we have studied. Every community presents to its members an array of alternative choices on what to think, feel, and do regarding a particular referent, be it a person, thing, or concept (*1, 22, 37, 39, 40, 46, 51*). Each position in that array of choices will be accepted, believed, and supported by a minority but nevertheless a substantial number of persons in that community. Anyone who chooses a particular position will find other individuals who already accept that position and who are ready and waiting to say "That's right; that's right; that's just what I believe and just what I do and here's the reason this is the right thing to do." The newcomer does not have to provide the rationale. Those already there will provide it for him.

We have overwhelming evidence that for every one of the alternative ways of responding toward a particular referent within a community, there is a consistent set of beliefs, disbeliefs, values, attitudes, and behaviors. In other words, for each position the beliefs, disbeliefs, attitudes, values, and behavior of every person in the community adhering to that position will be consistent with every other person's of the same position. And along with this consistency, and partly because of it, each person will believe that his position on the matter is the valid and true position. He will think that those who think otherwise are illogical and inconsistent. This accepted consistency of his beliefs, disbeliefs, and actions makes the problem of getting him to change a particularly tough one.

What factors influence a person to decide and behave in a particular way in a particular decision-making situation? Before I present the factors that took 6 years to uncover in our research program, I would like to have you think a minute about a decision you made recently that you remember clearly. Make a few notes to yourself in shorthand. (1) What was the issue? (2) What did you decide to do? (3) What factors did you take into account favoring the decision and action taken? (4) What factors did you consider opposing the action taken?

Let me state a few conclusions reached after studying numerous decisions of this kind.

(1) At the time a decision is made that decision will not be based on a single factor.

(2) Rather it will be based on a small number of factors perceived as important by the actor.

(3) These factors will come from one or more of 10 general types of beliefs and disbeliefs of the actor.

The first four I will call *Pull Factors*:

1. Goals
2. Belief orientations
3. Value standards
4. Habit and custom

The next three I will call *Push Factors*:

5. Expectations
6. Self commitment
7. Force

The last three I will call *Able Factors*:

8. Opportunity
9. Ability
10. Support

The first three pull factors are often called values. Thus, values are particular kinds of beliefs and disbeliefs. The next seven are not usually thought of as values specifically, but they do fit under a very broad definition of values; namely, criteria that direct choices. Whether we call them values or not does not matter. What does matter is that they are all important in directing decisions and actions. We have substantial proof of this in our research (*5, 34, 35, 44, 50, 51*).

This set of 10 factors indicates that as a man believes so he does. Our research also reveals another important set of factors that also shape human beliefs and actions but not so much at the time that the decision is being made. It would seem that men have great need to feel at one with themselves and to keep their beliefs, disbeliefs, and their attitudinal behavioral response patterns toward any given referent consistent with one another (*18, 34, 35, 37, 39*). Many people have pointed out that man strives for such consistency, Fritz Heider (*20*), Theodore Newcombe (*31*), and Leon Festinger (*14*), to mention just a few. Several of our studies based on large samples in several cultures attest to this type of consistency.

These data indicate that if the situationally relevant cluster of factors is sufficiently powerful in the decision-making situation to cause a person to behave in a manner inconsistent with his existing beliefs and disbeliefs, after the action occurs an unconscious internal process will commence to bring his beliefs and actions in relation to that referent as nearly in line with each other as possible.

To do this, he can either correct his future behavior, change his beliefs and disbeliefs about the referent, or both. The easiest and most likely one is that he will bring his beliefs and disbeliefs in line with his behavior. Thus, we can say that as a man does, so he also comes to believe.

This brings us to specificity. A common assumption is that the way a person thinks and acts regarding one referent will be the same for a number of others. Our research does not support this assumption. It reveals instead (*33, 36, 37*) that a person's beliefs, disbeliefs, and actions regarding a particular referent are specific to that referent and will not necessarily be relevant to another. This was clearly shown by a study (Heckert, 1959) that demonstrated that the same persons responded very differently to religious and secular referents, although the two have previously been grouped together as formal participation. In other words, there will not be any necessary relationships between the ways a person responds toward two different referents. But, as I pointed out earlier, a person will be highly consistent as to how he responds to any one particular referent.

What Are Life Styles?

Usually when we study human social life we select a very narrow, limited sector for our investigation. We do not study anything so general as dating, school, or religious life. Instead, we usually study a very small phase of one of these more general areas of life activity.

If people are asked to make a list of the various social systems in which they participate, most of them will indicate that they participate to any substantial degree in only four, five, or six such systems. Within any one of those five or six systems, there is an array of alternative beliefs and behaviors. These two factors taken together introduce a rather wide variety of possible styles of life.

Style of life as I use it is concerned with the unique configuration of the beliefs, disbeliefs, and social actions of a person in those systems in which he participates. It is very much akin to my conception of personality. It differs in that it is more explicitly linked to the systems in which the person participates.

Social systems have beliefs and disbeliefs, special goals and value standards some of which they may enforce rather strictly for their members. In our studies of value standards, we find that each social system has a small cluster of value standards that are related to the existence and the attainment of the special goals of that system. In the main, each social system will promote and protect its own cluster of value standards and will largely ignore the value standards of other social systems.

In a person's style of life his activities in one social system are usually unrelated to his life and activities in another of his systems. However, this is not always the case. It is quite possible for a person in his social and recreational life to become involved in activities that contradict the central clusters of value standards of the family or the church. When this happens in the life of a person, the consistency principle operates and he is likely to either change his behavior or withdraw from the system whose values are being threatened (*9, 37*). An individual's style of life needs to be devoid of conflicting value standards as he sees them or he will experience severe inner conflict.

A complete picture of an individual's style of life would need to take into account not only the systems in which he participates, but also those systems he deliberately avoids or fights against, for they, too, are a part of his life.

When a person participates in five or six social systems, it will become apparent that one or two of these systems are dominant in his life style, and when facing conflicting expectations, the dominant systems will be chosen over the less valued systems. Thus, one aspect of the style of life is the rank order dominance of the systems in which an individual participates as he perceives them.

Some Questions and Answers Regarding the Attitudes, Values, and Life Styles of Youth

Question: Is there such a thing as a particular set of values and attitudes that characterize youth?

Answer: No, there is great deal of range in the beliefs, disbeliefs, attitudes, values, and behavior of youth regarding any given referent.

Question: Is there any difference in the attitudes of youth and adults from the same community?

Answer: On most subjects the attitudes of youth are about the same as those of adults except where their lives tend not to overlap as in such things as recreation for youth (*24, 36, 41*).

Question: Is there any difference in the values of youth and the values of adults from the same communities?

Answer: Most research studies indicate that the youth and the adults of a community reflect approximately the same array of values. This generalization stands for most values with only minor qualifications. Studies of the political and sex beliefs of youth and adults, however, indicate a gradual intergenerational drift (*27, 30, 45*). Youth are a little left of the adults in their community politically and slightly more liberal regarding sex. The drift away from organized religion and confidence in churches is substantial as reported by Gallop's polls over time. This shift is greater for youth than for adults. The number or years of schooling is positively related to political liberalism and to liberal attitudes toward sex, and the number of years of schooling is negatively related to religious orthodoxy and conformity for most denominations but not for all (*39, 44*).

Question: Is there a generation gap?

Answer: Most studies provide no evidence of a generation gap for 80 percent of youth. There is, of course, always a generation gap for some. One of our studies indicates that about 15 percent of high school juniors and seniors feel that neither their parents nor their teachers understand them. Another of our studies focusing on the perceptions of high school juniors and seniors regarding the value standards of their parents perceive their own values as being least like their parents' on drinking, belief in God or a Supreme Being, sex morality, religious activity, concern for achievement, success, progress, and change, and on material comfort and conformity. The perception of differences was least for those with college-educated fathers and for religiously active families. Girls perceived greater differences between their values and their parents' than did boys. Our conclusion from our overall studies, then, is that no generation gap exists for most values, but there is evidence of some generation gap on a few specific value standards (Adelson, 1970).

Question: Is there a double standard?

Answer: Several studies indicate evidence of a double standard regarding sex values. Our studies support this but go further by indicating that parents are much more concerned with the value standards of daughters than of sons, particularly on a whole cluster of value standards related to the family.

Question: When do youth develop their values?

Answer: The studies of teenagers indicate that youth have established clear-cut value standards by the time they enter high school (*33, 47*).

Question: How much does high school and college education change the values of youth?

Answer: Thompson's and Carr's study (*47*) of the values of high school students and their teachers in California indicates that high school has very little effect on the value standards of students. Jacob's study (*21*) of American college students indicates that most colleges have little or no effect on the values of their students, and that the use of different types of teaching methods do not generate changes in values.

Question: Is it impossible to change values after junior high school years?

Answer: No, even though the school systems do not change values, this does not mean that they cannot be changed. After all, schools do not set out primarily to change values. This is not true, however, of many special interest groups. There are some types of value change that can occur in youth or later in adult life. In our research on religious organizations, we found that denominations are successful in deliberately and specifically teaching values, especially adherence to the values is met with positive sanctions. We find also that participation in the roles of officer or teacher actively fostering the activities and beliefs of the organization will generate major changes in the beliefs, values, attitudes and gross behavioral responses of the officer or teacher in regard to that organization. Active attenders in such an organization will change more than nonattending members though not nearly as much as officers and teachers (*12, 37, 39*). Another example of changing values is the manner in which professionals in a particular field incorporate the values of their profession. As mentioned earlier, change also comes about when in one social system a person becomes involved in activities that are contrary to the value standards of another of his social systems. Like water freezing in a crack the consistency principle is one of the most powerful factors in changing value standards. Drug users present a clear illustration of this phenomenon. Dramatic personality changes among drug users are often reported, and users tend to draw away from the family whose values are being threatened by the use of drugs. Another type of value and attitude change is that of the convert to a new organization with a different set of beliefs, values, and behavior. Converts to a new system often experience rather dramatic changes in their beliefs, values, attitudes, and behavior.

Question: Do people's values shift and change as they move from one situation to another?

Answer: No, a person behaves differently in different situations because the whole cluster of factors directing his actions that are relevant to that situation may be different. Values are only a part of those factors. Our in-depth studies of value standards in several populations disclosed that a person's values on the various kinds of honesty, for example, are so consistent with each other that they meet the criteria for a Guttman scale, which is based on response consistency. Values may shift over time but do not change for different situations at a given time.

Question: Are attitudes and values strongly related to social class?

Answer: Social class is a significant factor in relation to some attitudes and to some values but is not related to the majority of attitudes and values. We recently compared social class varibles with beliefs and disbeliefs as independent variables explaining behavior in five different cultures. The social class variables were significant at a relatively low level in approximately one-third of the cases. Beliefs and disbeliefs made a significant difference in almost all cases and were comparatively stronger in their relationship to behavior. Empey and Lubeck in their 3-year study (*11*) of delinquency in California found that social class was not significant in relation to delinquency for their population.

Question: We hear a lot about alienated students, about radical political leaders on both the left and the right. One gets the idea that almost all youth are like this these days. How many are there really?

Answer: Studies dealing with the young radicals and alienated youth all point out that these groups are very different from each other and combined they comprise only a small minority. Estimates range from less than 5 to as much as 10 percent.

Question: Where do the young radicals and the alienated get their attitudes and values?

Answers: Those who have studied these groupings on an intensive basis conclude that the attitudes and values of these young people are not very different from their parents' in most cases (*27*, *30*). The data indicate that they go a little further than their parents but not much. They point out that the parents did not act on their attitudes and opinions, whereas today's youth are very prone to take some action.

Question: Following the last comment, one might ask why the fathers did not act.

Answer: My answer to this question is mainly conjecture. In my opinion, one of the reasons was that it took a long time for Ghandi's nonviolent revolution tactics to diffuse to the United States. Before these became an alternative in American society, it was very difficult for a relatively powerless minority to take effective action against much more powerful opposition. Today's youth have tactics their fathers did not possess. Another reason is that the equality value is in essence being actively promoted not only by Government but also by schools, churches, and other special interest groups organized for that specific purpose.

Question: In what social systems do youth participate?

Answer: High school youth participate most in school, in their parental homes, with friends, on dates, in sports and recreation, in school clubs, and in part-time jobs. In the main, post high school youth have moved from the parental home and spend most of their time in college, on a job, or in the military service. After this large block of time come friendship groups, an apartment, dorm or living group, which for some becomes the family. These are followed by sports and recreation, dating and quasi-political and quasi-religious groups. About the only places where youth can be reached in large numbers, then, is at school, on a job, or in the military.

Question: In what way do the styles of life of high school and college youth differ?

Answer: A class of college undergraduates was given 18 descriptive terms and asked to choose the four that best described their total style of life when they were seniors in high school and the four that now best describe them as college undergraduates. As seniors in high school they described themselves mostly as (1) scholars, (2) pleasure seekers, (3) pals, (4) jocks (interest centered on athletics), and (5) searchers. They described themselves moderately as (6) homebodies, (7) the crowd (social set), and (8) isolates (who spend considerable time alone). As college undergraduates they described themselves mostly as (1) scholars, (2) searchers, and (3) pleasure seekers. Moderately they described themselves as (4) pals, (5) marriage-home-career seekers, and (6) isolates. A few observations on the differences are of interest. The jocks and the crowd are high school roles and do not carry strongly into college. Pals dropped from a major to a secondary role. The searching role was high for both high school and college, but increased in the college years. Heaven seekers (the religious) were conspicuous by their absence, both at the high school and at the college levels. A small minority of alienated persons was found both in high school and college, the number being about the same for both periods.

Question: Are all the people cited on values on youth talking about the same things when they use the term values?

Answer: No, there are at least eight or nine different conceptions of values used in these various research studies, but they have enough in common that the generalizations made about them are still highly acceptable for our present purposes.

Question: What does the idea of a life style add to our understanding? Why not just talk about the attitudes and values of youth?

Answer: In my opinion, a consideration of life styles add several dimensions to our understanding that we would not otherwise have. We see that the life style of a person consists of his participation in several social systems that are, in fact, special interest organizations; that these special interest systems have particular beliefs, value standards, and behaviors that they promote for their members; and that some of the person's social systems are not at all related to some of his other systems—they exist apart but sometimes overlap and help and support each other. We see that each of his systems is promoting a small cluster of value standards related to its existence and to the achievement of its goals. These clusters of value standards are very different from each other and may not conflict. On the other hand, sometimes they do come in conflict with each other, and when they do the person is likely to withdraw from one or the other of the conflicting systems and thus change his style of life. As mentioned earlier, when we observe the person's attachment to his social systems, we observe that he is much more strongly attached to one or two of them than to the others. Thus, if a conflict does arise we know that the dominant organizations will prevail. We observe also that it is not just the values of the social systems that present problems but that sometimes the permissiveness of one system or behavior fostered within it comes into conflict with the value standards of another system and has the same result as if the values of the two systems were in conflict. Basic to these latter observations is the fact that the total configuration of beliefs, disbeliefs, value standards, and attitudinal behavioral response patterns of a person must not be in conflict with each other. For while the individual may participate in five or six social systems, he is one person and that whole person must be acceptable to each of the systems and to himself.

Question: Are there philosophies of life associated with styles of life?

Answer: In his study of alienated youth, Keniston (*27*) indicated that these young people were clearly existentialist in their philosophies of life. We have already noted the consistency between behavior and the beliefs, values, and attitudes of both youth and adults. Fritz Heider (*19*) goes further to say that behind all interpersonal behavior, the individual has an implicit, naive theory. I, too, would like to suggest that behind every style of life there is a philosophy of life, an integrated belief system that is accepted as being true. Furthermore, some philosophies of life and styles of life are highly compatible with one another while some philosophies of life are incompatible with some styles of life.

Question: Which comes first, behavior followed by consistent beliefs and philosophy or beliefs and philosophy followed by consistent behavior?

Answer: In the general socialization process, beliefs, philosophy, and action probably come mixed together. Our studies of factors influencing beliefs and behavior indicate that concentration on beliefs can change behavior and also that participation in behavioral activities may precede and influence the beliefs and the future behavior operating on the consistency principle. Specifically focusing on some behaviors very much related to the health of youth, such as smoking, drinking, dietary patterns, drug use, and sexual relations, these behaviors are often first experienced in situations in which a powerful cluster of factors encourages participation. Strong peer group pressure is often one of those factors. The person who does not have a very powerful set of personal moral value standards relating to such behaviors has little chance to withstand continuous onslaughts of pressure to participate. We are in the habit of thinking that first a person's beliefs change, then later his behavior changes. Our findings indicate that in some changes, among them the most dramatic, a behavioral change occurred first, which precipitated other behavioral changes followed later by change in the belief system.

Question: What is happening to the family values cluster?

Answer: A few years ago college student respondents in our studies identified a small cluster of family value standards relevant to the existence of the family and to the fulfillment of its major functions. There were loyalty to family and friends, sexual morality, avoidance of excessive drinking, honesty, support of self and dependents, understanding the problems and needs of others, personal cleanliness, concern with achievement and success, and faith in God or a Supreme Being. Later, another study added the avoidance of the use of drugs to the list. Then, in a 1969 study of high school youth, the respondents indicated the widest gap between themselves and their parents was on family value standards related to drinking, sex, and in belief in God or a Supreme Being. In relation to these family value standards, we note that (1) drug use is increasing, (2) cohabitation—a pattern previously limited mainly to Army camp towns—has become a minority alternative on university campuses, (3) many schools have abdicated responsibility or concern for family value standards and have withdrawn to protect only those value standards related to the existence of the school and the attainment of limited educational functions. Most churches, furthermore, have turned from concern for personal values to global societal problems. Sexual morality, only a few years ago the most important value standard for the wife and daughter roles in the family, is losing ground, and premarital and extramarital sex is gaining more adherents. The proportion of youth who participate in formal churches or who perceive religion as having a central place in their style of life has decreased drastically, not only in college years but also in the early teen years. The family has largely lost the influence of both the church and the school as supporters of family value standards. It is an open question whether the family can maintain its main value standards without the support of other social systems within the society. I call attention to this family cluster in particular because it contains several value standards that are related to the biggest health problems of youth.

Summary and Implications for the Health Problems of Youth

It is natural for commentators, reporters, and the like to focus attention where the action is. For this reason, much attention lately has been given to youth behaviors of only a small minority. These minorities are often highly visible and vocal, and TV programs and the news media make them even more so. Our first conclusions are that 80 percent of this country's youth are, in fact, following the patterns established by their parents and not very much influenced in their attitudes and values by high school and college educational experiences.

While the data clearly show that parental patterns prevail, we should not conclude thereby that parental patterns are necessarily good. Great variation exists in the attitudes, values, and behavior of both adults and youth. The sex behavior of the fathers during World War II is probably not very different from the sex behavior of their sons in South Vietnam. I think that we should keep in mind that there are some attitudes, values, and behavior patterns that parents pass on to their children that are not conducive to good health. The smoking, drinking, and overeating patterns are illustrative of parental examples that certainly do not help improve the health of youth.

The community and society presents to its members an array of alternative beliefs, attitudes, and behaviors. From that array the community members choose their own beliefs, values, attitudes, and behavior. Drugs and cohabitation are relatively recent arrivals in the array of alternatives.

While no generation gap is evident for parents and youth on most attitudes and values, our 1969 study of parental influence on value standards indicates some gap particularly on the health-related factors of drinking and sex. Daughters perceive more gap than sons, probably because their earlier freedoms were much more restricted than were those of sons.

It is too early to appraise the long-term effects of the fact that many schools have abdicated their support of family value standards and that churches have largely turned their attention to other matters even as the numbers of youth who no longer participate in formal church organizations decreases. These matters are of primary importance because the values being thrown aside are precisely those that contribute to major health problems not only of youth but of society in general.

The oft noted intergenerational drift to more liberation on sex and the use of both soft and hard drugs presents an expanding health problem as does the almost continuous international warfare that involves such large numbers of young people. The fact that people involved in behavior patterns adopt beliefs and philosophies of life that justify their current behaviors insures that such patterns are not passing but are likely to endure. Each life style adopted becomes encased by a consistent set of supportive attitudes, values, beliefs, and behaviors making it relatively impervious to change. Programs that simply diffuse information, like most drug programs do, have little chance of successfully combating the problems of adolescents. To bring about change a program must contain a powerful package of change factors. The identification of the factors that direct decisions and actions puts us in a better position to build powerful packages that have at least a fighting chance of success. If we look to those programs where success is being achieved, and there are some, we will note that these programs are composed of multiple and very powerful packages.

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Youth Reactor Panel on Attitudes, Values, and Life Styles of Youth

Moderator:
William W. Reeder, Ph.D.

Youth Reactors:
Deborah Ann
April
Theresa
Douglas

Dr. Reeder: AS YOU HAVE LISTENED TO MY REMARKS ABOUT THE VALUE STANDARDS OF YOUTH, WOULD YOU LIKE TO REACT ON HOW THESE COMPARE TO YOUR SCHOOL? ALSO, YOU HAVE LOOKED AT THE 1969 HIGH SCHOOL STUDY IN WHICH WE CONCENTRATED ON VALUE STANDARDS OF HIGH SCHOOL YOUTH IN MY OWN COMMUNITY AND ANALYZED THE INFLUENCE OF PARENTS ON THE VALUE STANDARDS OF THEIR SONS AND DAUGHTERS AS AN EVIDENCE OF THE GENERATION GAP. DOES THIS FIT PRETTY CLOSE TO WHAT YOU SEE?

Douglas: I was interested in some of the reactions involving religion, for example, the decline in organized religion and also in sexual mores. You mentioned the world of the dating game as a major influence. The institution of dating is dying away. Now we have a more honest and straight-forward relationship than just actively going somewhere.

Dr. Reeder: DO YOU MEAN THERE ARE MORE INFORMAL ACTIVITIES? DO YOU THINK THERE IS MORE OF WHAT WE MIGHT CALL INFORMAL DATING AND THAT COUPLES ARE SPENDING MORE TIME TOGETHER?

Douglas: I would think so. There's great emphasis on being more honest and more natural which the previous formal dating did not include.

Dr. Reeder: I WONDER IF WE MIGHT GET A REACTION FROM SOME OF THE GIRLS ON DATING OR ON SOME OTHER ASPECT?

April: I attend Immaculate Conception Academy. We take religion as one of our courses. Religion in our school is not formal religion but Christian attitudes toward our brothers. It is evident that our parents influence our values. For instance, they might approve of some man I'm dating so just because they approve, I say, "I don't particularly like him." In school my values are determined by experience. My values are influenced by the way I react to my fellow students.

Theresa: Dr. Reeder, in a community you find many people with such a wide variety of attitudes and values. If you can't decide on the many values and attitudes you should take and you behave at variance in a particular situation, does this mean that this becomes your value or attitude toward it?

Dr. Reeder: ON THE MAN-WOMAN RELATIONS' QUESTION WE ASKED ABOUT SIX DIFFERENT THINGS INTRODUCED BY THE PHRASE, "IF YOU HAD A SON OR DAUGHTER IN THIS POSITION HOW SERIOUS WOULD YOU CONSIDER IT?" THESE ARE THE PEOPLE WHO SAID IT WOULD BE WRONG AND VERY SERIOUS. WE FOUND ABOUT 15 PERCENT WHO SAID EVERY ONE OF THESE SIX WOULD BE WRONG AND VERY SERIOUS. AT THE OTHER EXTREME—THERE WERE 15 PERCENT WHO SAID THAT NOT ONE OF THESE THINGS WAS WRONG OR VERY SERIOUS. THESE PEOPLE WITH EXTREME VIEWS WERE IN THE SAME COMMUNITY. THE INTERESTING THING ABOUT THIS IS THAT IF YOU KNOW THE PERSON'S SCORE IS THREE YOU WOULD KNOW WHICH THREE WERE SERIOUS. IN A COMMUNITY YOU HAVE BOTH YOUNG AND OLDER PEOPLE ASSOCIATING WITH EACH OTHER. ONE SAYS ALL SIX OF THESE THINGS ARE VERY SERIOUS BY HIS VALUE STANDARDS AND ANOTHER SAYS NONE OF THE SIX THINGS ARE VERY SERIOUS. IS THIS THE PERSON'S OWN VALUE STANDARD? IN THE SENSE THAT I USE VALUE STANDARDS, THE PERSON WHO SAYS AN ITEM IS VERY SERIOUS IS EXPRESSING A VALUE STANDARD. IT IS PERFECTLY POSSIBLE FOR ONE PERSON TO HAVE A VALUE STANDARD AND FOR SOMEONE ELSE NOT TO HAVE THAT SAME VALUE STANDARD. THE LATTER SAYS: THAT'S SOCIETY'S EXPECTATIONS! ITS OLD FASHIONED. DISREGARD IT! IT'S NOT A PERSONAL VALUE STANDARD TO THAT PERSON. IN A COMMUNITY AND IN HIGH SCHOOL THE MEMBERS DIFFER WIDELY IN THEIR VALUE STANDARDS ON EVERYTHING WE HAVE STUDIED.

Theresa: Doesn't the media affect people's attitudes and values on things such as smoking?

Dr. Reeder: THAT'S A VERY INTERESTING QUESTION. ABOUT 2 WEEKS AGO I SAW A PUBLIC HEALTH SERVICE REPORT STATING THERE IS AN INCREASE IN THE PERCENTTAGE OF PEOPLE WHO ARE SMOKING. THIS IS IN SPITE OF THE FACT THAT CIGARETTE COMMERCIALS HAVE BEEN TAKEN OFF TV ADVERTISING. WE KNOW THAT PEER GROUPS BRING CHANGES. WHEN PEOPLE START SMOKING, THEY BEGIN TO JUSTIFY THEIR SMOKING. I HAVE NOT FOUND VERY MANY DRUG USERS WHO THINK THAT MARIJUNA SHOULD NOT BE LEGALIZED. PEOPLE TEND TO JUSTIFY AND SUPPORT THE KIND OF THING THEY ARE DOING. THEY HAVE TO LIVE WITH THEMSELVES SO THEY SELECT BELIEFS THAT FIT WHAT THEY ARE DOING. YOU SAID, "I LEARN FROM EXPERIENCE." ONE OF THE MOST POWERFUL TEACHERS

WE HAVE IS OUR EXPERIENCE. ANOTHER ONE IS THE GROUPS TO WHICH WE BELONG — ESPECIALLY OUR FAMILIES.

Deborah: The family situation is falling apart. Youth places more value on their peer groups than on the family.

Dr. Reeder: NOT LONG AGO MY DAUGHTER, WHO HAS A FAIRLY CLOSE RELATIONSHIP WITH HER MOTHER, COMMENTED AFTER SHE HAD CUT HER HAIR THAT HER MOTHER TOLD HER SHE WOULD LOOK BETTER A DOZEN TIMES, BUT ONLY AFTER ONE OF HER FRIENDS SAID TO HER "YOU WOULD LOOK BETTER IF YOUR HAIR WAS SHORTER," DID SHE GO OUT AND HAVE IT CUT. I THINK YOU'RE RIGHT. I THINK MANY TIMES YOUNG PEOPLE DON'T LISTEN TO THEIR PARENTS. THEY DO LISTEN MORE TO THEIR PEER GROUP.

Douglas: I think part of this would be due to our yearning for independence. Also there is a kind of resentment that you have to check in at home. For example, I've been in situations where other people and I wanted to do something completely spontaneous, such as drive to another State and spend the night. Freedom like that is what I mean. To check in at home all the time is somewhat a burden. This affects a lot of parental relationships.

Dr. Reeder: IT'S VERY DIFFICULT FOR US TO PUT OURSELVES IN EACH OTHER'S SHOES. IF YOU WANT TO UNDERSTAND A PERSON, YOU HAVE TO WALK IN THEIR SHOES A COUPLE OF MILES. IT IS RATHER DIFFICULT FOR PARENTS TO WALK IN THE SHOES OF YOUTH. I THINK IT'S VERY DIFFICULT FOR YOUTH TO WALK IN THE SHOES OF THEIR PARENTS. IT WORKS BOTH WAYS. THIS IS A VERY IMPORTANT PROBLEM.

Theresa: I believe in a way you have to lean on someone—your parents or if not your parents, a friend. I'm glad that I can ask my parents if I can go to another State. I like someone's opinion on what I should do.

Douglas: Talk to or ask—yes, but asking should you do this. . . . What if you're sure this is what you should do? In that case, do you still feel you have a need to ask someone else?

Theresa: I would.

Douglas: You would!

Dr. Reeder: MAY I COMMENT ON SOMETHING IN THE 1969 STUDY THAT NONE OF US HAVE MENTIONED. I THINK WE SEE IT REFLECTED RIGHT HERE. PARENTS ARE MUCH LESS CONCERNED AND TALK MUCH LESS TO THEIR SONS THAN TO THEIR DAUGHTERS. IT IS THE MOTHER WHO TALKS TO THE DAUGHTER; IT'S MORE THE FATHER WHO TALKS TO HIS SON AND THEN MAINLY ABOUT VOCATIONAL MATTERS. DAUGHTERS ARE TALKED TO A GREAT DEAL ABOUT THE FAMILY ROLE. IT WOULD APPEAR THAT THE MOTHER ORIENTS THE DAUGHTER TO BE A PROTECTOR OF THE FAMILY VALUE SYSTEMS.

Douglas: The statement that in the family unit the father conditions the son this way and the mother conditions the daughter that way bothers me very much. It bothers me that people would try to condition other people to roles.

Dr. Reeder: I SEE COMING THROUGH HERE SOMETHING I OBSERVE WITH MY OWN CHILDREN—THE DESIRE FOR FREEDOM. "TO BE MYSELF" —"TO FIND MYSELF"—"TO DISCOVER WHAT IT'S ALL ABOUT AND DO IT ALL BY MYSELF." MY 9-YEAR OLD DAUGHTER OFTEN SAYS, "WHY CAN'T I MAKE MY OWN DECISONS? I'M A FREE AGENT, I HAVE A RIGHT TO DECIDE."

Douglas: One of the major problems is that of balance. Parents need to give the children guidance, but there has to be a certain point at which they stop.

Dr. Reeder: THAT'S THE TOUGH QUESTON—AT WHAT POINT, HOW MUCH INDEPENDENCE—AT WHAT TIME AND AT WHAT PACING? A FRIEND ONCE SAID, "ONE OF THE BIGGEST PROBLEMS OF PARENTS IS TO TEACH THEIR CHILDREN HOW TO BECOME INDEPENDENT OF THEM AND TO MAKE INDEPENDENT BUT WISE DECISIONS. IT'S LIKEWISE HARD FOR THE PARENTS TO BECOME INDEPENDENT OF THE CHILDREN." THAT'S ALSO A PROBLEM.

HEALTH STATUS OF YOUTH

Felix P. Heald, M.D., *professor, Department of Pediatrics and Head, Division of Adolescent Medicine, School of Medicine, University of Maryland, Baltimore, Md.*

"Teenagers are quite healthy." This is a statement that is commonly made about teenagers. I have heard it often enough that I thought it would be worthwhile to see what kind of information can be generated from the literature about the general health of teenagers. I wish to present the data to you and let you make up your own mind whether you feel the teenage period is truly a "healthy period." This discussion will be divided into two sections.

First, we are going to take a look at mortality. I think everyone will agree that it is a finite end point. Then we are going to look at morbidity, less finite but still final. Adolescence is the terminal portion of the human growth curve. It is the only period during extra-uterine human growth during which growth increases. In all other phases of human growth prior to adolescence, growth in terms of velocity is decelerated. Characteristics of adolescence are this increased velocity in terms of biological growth and, as a consequence, psychological changes and possibly intellectual changes.

The general biological and psychological terms define adolescence as a time in life when individuals are between the ages of 10 and 19 years. The most recent census suggests there are 38 million youngsters between the ages of 10 and 19. If we look at death rates from infancy through middle age, we learn two things: the ages of 10 to 14 years have the lowest death rate of any time during the life of man and as at other ages there is a striking sex difference in the death rate. In infancy the male child is more susceptible to death than the female. This is also true in the 10 to 14 and the 15 to 19 year-old age groups. Why are males more susceptible to death than females? Let us look at the mortality figures from the year 1962. In 1962 from a population of approximately 34 million adolescents, there were 20,500 deaths. Of these 20,500 deaths, 13,000 were males and the rest were females. There were 12,000 violent or accidental deaths, and the remaining number of deaths were caused by disease. Of the violent deaths, 9,100 were males and 2,600 were females. Of the almost 12,000 violent deaths, there were 6,200 deaths caused by the automobile. Most of these deaths were in the 15 to 19 year-old age group and 4,700 of the 6,200 deaths were males. If any of you have teenagers and live in the city, you know by insurance rates how the insurance companies view the risk of teenage males. Data bear this out.

The second most common cause of violent or accidental deaths was drowning. In 1962 of the 1,400 adolescents who drowned, 1,300 were males. It is not the male who can't swim, but the male who overestimates his swimming ability to handle a particular situation.

The third most common cause of adolescent deaths was suicide. Of the 650 suicides, 500 were males. Females, however, attempted suicide 10 times more frequently than males. There were almost as many deaths by homicide as by suicide, 600 by firearms. The cause of death from disease, 8,700 deaths, closely parallels the death rate that adults experience from disease. Cancer is the most common cause of death in the teenage disease category, cardiovascular renal disease the second cause, congenital malformation the third, infectious disease the fourth, and diabetes the fifth.

Although this is a brief look at mortality figures, one can conclude that adolescence in terms of disease, but less in terms of accidents, is a very healthy period. Early adolescence has the minimal death rate for all humans. To quickly reduce the death rate in teenagers, we would need to concentrate on accidents especially in the males. If we would rethink the development of males, we would not have our present age laws pertaining to automobiles. At about the age of sixteen, the male adolescent is at his peak of normal rebellion and probably has less impulse control than at any time of his life.

About one-half of this country's population is under the age of 25. In planning health care systems, sometimes this fact is overlooked. Two-thirds of our teenagers live in the cities. A clear trend as borne out by the 1970 census is the migration to the city. This has rather sharp implications for the health of adolescents.

Over the past century and one-half, children or adolescents have matured much faster. A century ago in Europe the average mean menarcheal age was 17 years, now it is 14 years. There is clear evidence that the mean menarcheal age is still decreasing. Obviously, at some point it is going to level off, and I believe that it is closely approaching that level. This trend is closely related to socioeconomic status. I believe that it reflects the permissive effects that adequate nutrition exerts on genetic growth. As more children have adequate amounts of foods, they achieve their full growth potential. This has a rather sharp implication on our society. It means that the first menstrual period is a hallmark of reproduction readiness. One-half of all girls in their first menstrual period are ovulating or are fertile. One would predict that reproduction among the young would increase if we have younger children who are reproductively ready and potentially capable of being active. There are more teenage mothers. Along with more teenage mothers, there are more babies born to teenage mothers. Comparing the years 1960 and 1967, there was a 17 percent reduction of live births at all ages. In the 18 to 29 year-old group there was an 11.5 percent reduction; in the 15 to 17 year-old, a 3.7 percent increase; and under 15 years, a 26 percent increase. Teenage mothers are a high risk both to themselves in terms of their health during pregnancy and to their offspring. Their babies are of much higher risk of being born small or too soon.

Let's briefly look at four different aspects of morbidity, disease concepts, in adolescents.

1. Diseases found only in teenagers.

2. Disorders or problems commonly found in adolescents, and when they occur in adolescence, they have special implications for handling.

3. Disorders which teenagers have which do not appear to adversely affect their health dur-

ing adolescence but have important implications of morbidity and mortality during adult life.

4. Diseases which are thought not likely to occur during adolescence, but are developing rapidly and have disastrous implications for adult morbidity and mortality.

There are very few diseases that are only found in teenagers. They are almost entirely bone disorders. Fortunately, for the most part, they are very benign or not very disabling.

In the second category are those disorders which commonly occur in adolescence, and when they do occur, they have special implications. Teenage pregnancy is one. To summarize what I have said, pregnancy during adolescence carries higher risk to the mother and higher risk for her offspring. The growing mother who appears most susceptible to complications is the one who is closer to menarche, the first menstrual period. In the late teens, about 17 to 18 years and on, reproduction is performed very well. Teenage pregnancy is a stress psychologically. The suicide rate for teenage mothers is about 10 times higher than for teenagers who are not pregnant.

Venereal disease has reached epidemic proportions in this country. I will only talk about two venereal diseases, gonorrhea and syphilis. The most common age for gonorrhea is the early 20's; the second most common age is 15 to 19 years. Gonorrhea is a disease prevalent in youngsters between 15 to 24 years of age. It is hard to estimate prevalence because for every reporting case there are 10 that are not reported. Last year it was estimated that there were 1½ million cases of gonorrhea in this country. Probably more than a million cases of gonorrhea occurred in late adolescence or early adulthood. The most alarming part of the gonorrhea story is that in 1945 all strains of the bacteria causing gonorrhea were sensitive to 300,000 IU of penicillin. In 1971, however, boys were given 2.4 million units and girls 4.8 million units and organisms are still encountered which do not respond to this amount of penicillin.

Syphilis is primarily a disease of the 15 to 24 year-olds. Fortunately, rates for syphilis are going down. In the early 1950's there were about 400,000 cases; last year, approximately 90,000. Syphilis is a dangerous disease. It is difficult to detect sometimes and to treat without it having devastating effects on the central nervous system. It has been strongly suggested if appropriate treatment centers are available for teenagers, they are more apt to seek medical help. Sex education has had no effect on the incidence of venereal disease. Programs attempting to use education to reduce the incidence of venereal disease in teenagers have no information to support them. One study suggests that youngsters who are more knowledgeable about venereal disease are more inclined to seek medical care earlier, because they know more of what to expect as adults of the consequence of being treated. Another study suggests a reverse effect; that is, youngsters who have been through a venereal disease education program have more venereal disease.

People frequently ask about the emotional health or emotional illnesses of teenagers. Data on emotional illnesses of teenagers are difficult to obtain. In the year 1962, one-third of all discharges from psychotherapeutic out-patient clinics were teenagers. Evidence clearly suggests that there is an upswing in the numbers of adolescents who seek psychiatric care and who are admitted for care. It is not surprising that during the turmoil and stresses of adolescence, there are youngsters who are not able to cope as those agents of society responsible for their care see it and there is a period of considerable disequilibrium. I really tend to view this particular period as a printout, using computer terminology, of the developmental problem of success or failure of the process of growth and development.

In the third category is a disease that doesn't appear to have any serious consequences to adolescence but has some important consequences later in life; for example, obesity. You can tell if a teenager is obese. If he looks fat, he is fat. Not much happens to the healthier adolescent who is obese. During middle and late adult life, however, obesity is associated with a higher risk of cardiovascular complications, the male being more susceptible than the female. What chance is there that a fat child or adolescent will be fat as an adult? There are a number of longitudal studies that clearly show that obese children become obese adults. Eight out of 10 obese children remain obese as adults. Furthermore, the more severely obese they tend to be, the more resistant to treatment.

In the fourth category are disorders which we do not normally think of in the teenager, but are prevalent and have effect on adult morbidity and mortality, for example, hypertension and athrosclerosis.

I will not summarize this discussion for you. I will let you make your own judgment as to what you think is the status of health of adolescents in 1971.

Questions Following Dr. Heald's Presentation

1. From the 1962 death rate study were data available concerning the death rate from abortions in the 10 to 19-year-old female age group? If so, what are the figures and how do they compare with the 1970's?

Answer: My answer to that is I just don't know. I have no solid data on abortions in adolescents.

2. There were numerous questions relating to the speaker's opinion concerning youth and the use of drugs today.

Answer: All of you know the problems of drugs in adolescence. The problem of drug use has become partially uncontrollable due to emotion. It is a fad right now and there is much emotion surrounding the use of drugs. Death from drug overdose is a large problem. It, in fact, exceeds the death rates from suicide. The overdose of drugs is probably related to suicide rates. Part of the control of drugs will come from two sources: first, the fad portion of drug use will decrease with time and secondly, the Government responses and laws must be appropriate enough to curtail the supply of drugs that is circulating to the teenagers. These two factors will contribute to an end of the problem. Also, the drug problem will be stopped only when appropriate medical drugs are distributed properly. One example of drugs which must have tighter control is amphetamines. They must be used only when they are medically necessary. It is a dangerous drug to use in the treatment of obesity, and there is no evidence of favorable effects. A very small number of children respond effectively to amphetamines. The misuse of prescription drugs is, too, perhaps a fad, and it, too, will pass. This control could be hastened by the clampdown by the Government on the use of these drugs.

3. When do you consider underweight to be a problem?

Answer: This is a problem only in the underweight child who does not have enough food available to eat.

4. Is the increasing acceptance of fad diets a health problem?

Answer: Fad diets are the product of increased bodily concern which is very normal in adolescence. Teenage girls tend normally to add body fat. Our culture preference is for leanness. People see leanness as being beautiful and this is probably the basis for fad diets.

5. With the increasing number of people on the poverty level do you feel that teenagers are a health problem in this respect?

Answer: When we talk about teenagers and diets and nutrition, we really need to think of teenagers in terms of their rate of growth. Their growth is over and they can stand considerable caloric restrictions. Teenagers are more anabolic and more sensitive than a 6- or 8-year-old to calorie restriction than to protein restriction. A 15-year-old girl, 5 years postmenarche, functioning as an adult, restricted her caloric intake from 4,200 to 900 calories and was still in positive nitrogen balance. A 15-year-old boy, three-fourths through his growth spurt, was put on a controlled diet of 2,500 calories with adequate amounts of protein, and he was thrown into negative nitrogen balance while the 300-pound girl remained in positive balance, remember—even at low calorie levels.

THE ADOLESCENT—HIS GROWTH AND DEVELOPMENT

ISABELLE VALADIAN, M.D., M.P.H., *associate professor of Maternal and Child Health, School of Public Health, Harvard University, Boston, Mass.*

Adolescence

Definition

Period in which the child grows up into a mature man or woman. He becomes sexually mature, achieves the ability to reproduce, and realizes the kind of physique he is to have as an adult.

He does so by undergoing profound, complex, and interrelated changes: physical, physiological, mental, emotional, and social.

Duration

Boundaries are difficult to define. Adolescence starts with changes in hormonal activities; it ends with the last stage of sex organ maturation and physical maturation.

In this broad sense, adolescence covers over half of the entire growth and development period, extending throughout the major part of the second decade.

From the psychological, mental, and social point of view, the end is even more vague since it varies according to the criteria used by a given culture or society to define an adult and his expected behavioral characteristics.

However, the major recognizable physical events occur within a much shorter period called pubescence. Adolescence thus includes three periods: prepubescence, pubescence, and postpubescence.

Prepubescence includes the early and rather hidden changes associated with the beginning of altered endocrine activities, and starts about 8 for girls and 10 for boys.

Postpubescence, on the other hand, is the finishing off process of attaining adulthood, covering at least 2 to 3 years; it is a period of settling down and completing the transition to adult maturity. We see a terminal deceleration of growth, but more growth of muscle and maturation of sex organ function.

Pubescence, which is the central period, starts more abruptly: on the average, about 10 to 12 in girls and 12 to 14 in boys. It includes the major changes associated with very rapid growth and maturation which are discussed below.

These changes are not only tremendous, but the interrelationships between them are extremely complex; they are sufficiently complex to create the possibility of disequilibrium. The apparent confusion surrounding pubescence and the commonly held belief that progress during this period is disorderly and unpredictable is due to our lack of knowledge. There is as much order in growth and maturation progress during this period as in earlier ones. What gives the impression of confusion is the greater variation among individuals in the timing of events in respect to chronologic age.

I. Physical Changes

1.—Growth Spurt in Height and Weight

This is the 2d cycle of rapid growth. The first, covering the prenatal to infancy period, starts at conception and its accelerating phase is completed during fetal life, with a decelerating phase extending throughout much of infancy. The first cycle is followed by a period of relatively uniform and slow growth over practically the entire middle childhood.

In the second cycle, the accelerating phase starts in the prepubescent stages, reaches a peak where many of the secondary sex characteristics and major physiologic changes occur and tapers off to cessation of growth at maturity.

Rapid growth is more vulnerable to environmental circumstances and requires at these periods closer supervision and a different schedule of examination from other times. This fact is well appreciated in infant care: traditionally infants are seen monthly in the first year and less frequently in the second year, but this fact is overlooked in the care of the adolescent although the vulnerability has been established. For example, loss in stature of Japanese children happened at every age level during World War II, but the greatest drop was in boys of 14 years and girls of 12 years. Since 1948 steady and rapid increase in height occurs in these same groups emphasizing the sensitivity of the adolescent age period (*5*).

During the second cycle changes in weight start earlier than changes in height, but gains are less striking and fluctuate more. Changes in height are easier to follow and are more abrupt. A child who is gaining 2 to 3 cms. per year starts to gain 5 to 6 cms. for a couple of years; he then may gain much more, 9 to 11 cms. in one year and reaches the peak of height increment during his year of maximum growth. After this year, he will return to a gain of 5 to 6 cms. and less until his growth stops.

Assessment of the growth spurt.—Distribution of a variety of physical measurements obtained from large groups of children are expressed in percentile values or in means and standard deviations. These are available for all ages as standards of comparison.

These standards are difficult to use routinely in table form. Given a series of numerical values of an individual child, it is difficult to determine mentally how they differ from the standards. Standards are best used when translated into charts on which lines indicate the sequential changes of the distribution of numerical values with time (mostly chronologic age) for either means and standard deviation or for the 3d, 10th, 25th, 50th, 75th, 90th, and 97th percentiles. Percentile charts developed at the Harvard School of Public Health are based on "distance"; that is, on measurement attained at one time by cumulative progress during the preceding years (fig. 1). Other charts are based on velocity, that is, on increments gained from the previous measurement.

The first step in appraising the growth of a child is by comparing him with others of the same sex, age, and, preferably, the same ethnic group. There is no specific point in a standard at which normality ends and abnormality begins, but a child in the extremes of the range or outside the range needs further evaluation.

A single value either of height or weight tells little about a child's growth. For example, three children of the same age happen to be on the 25th percentile for their weight. One got there by always following that percentile line, the other deviated down from the 75th while the other deviated up from the 10th percentile; obviously, the situations are quite different.

Sequential values are necessary to ascertain how a child maintains his relative position from one year to the next; this is the only way to recognize and understand the pattern of growth of an individual child.

The importance of sequential values over the years preceding adolescence is further enhanced in adolescence because it provides a reliable method for locating the upward departure from an established channel of growth and, therefore, it provides a simple way of recognizing the onset of forthcoming changes.

Measurements of a single dimension are of very limited value, for example, a child following on the 25th percentile level for weight cannot be considered undernourished if his height is on the 3d, 10th, or 25th, but he might be undernourished if his height were on the 75th or 90th. Dimensions, therefore, should be compared; here again, there are no established rules for estimating the difference in position of height and weight, but usually a difference of more than two percentile lines signals further interpretation.

Interpretation of the charts is of paramount importance, especially if the measurements are limited only to two dimensions such as height and weight. Figure 2 illustrates the growth of two boys from the Longitudinal Studies of Child Health and Development. It shows on the left side the pattern of height and weight of two boys. These patterns are so similar that at times they superimpose, but on the right side the values of the measurements of the subcutaneous fat and muscles show that the one boy was fat and the other more muscular.

In adolescence, interpretation of the growth curve of an individual child becomes even more important because standards for height and weight are based on cross-sectional measure-

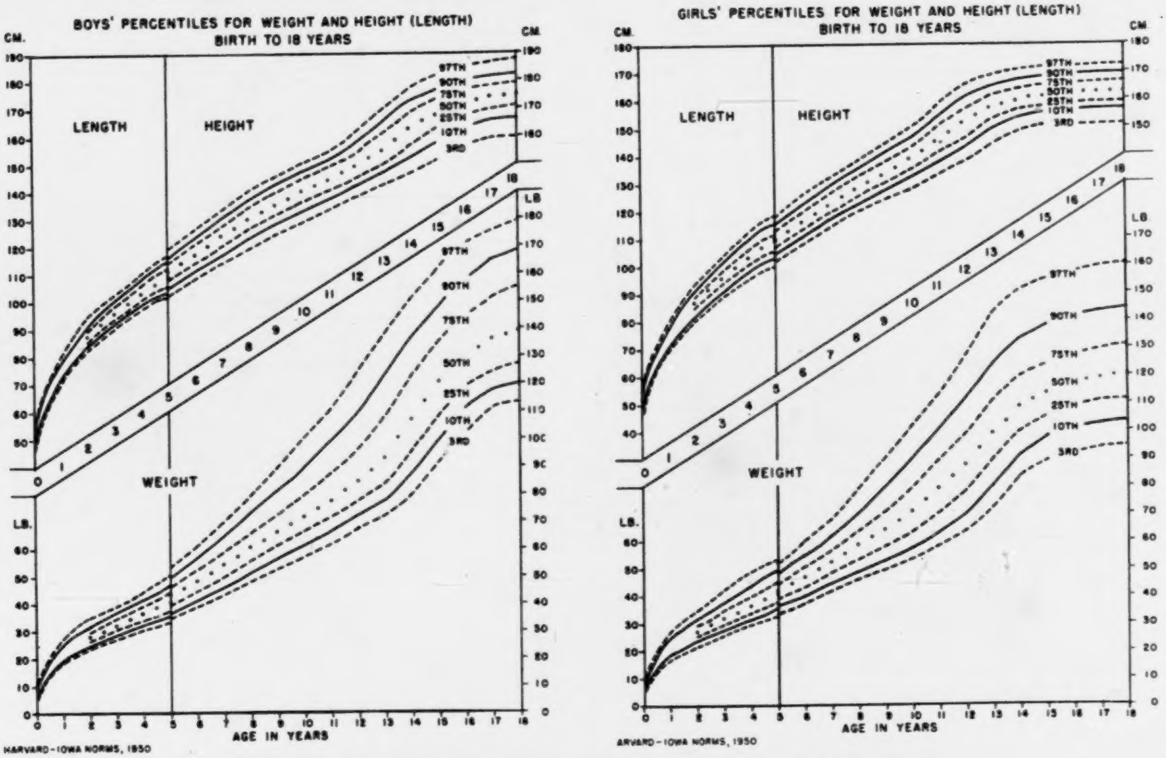

Figure 1.—Percentile graph for height and weight: *A*, Boys; *B*, girls.
(Longitudinal Studies of Child Health and Development, Harvard School of Public Health.)

ments and are constructed by averaging measurements attained at various ages by different groups of children. The averaging process masks individual differences and in adolescence where differences acquire greater magnitude the percentile lines corresponding to this period are smoothed out and spread along time. Therefore, we see rarely the growth curve on an individual follow the percentile channel established in childhood all the way through adolescence, but, rather, we usually see curves crossing channels upward more or less abruptly as illustrated in figure 3, which represents the growth in height of three girls, again from the Longitudinal Studies of Child Health and Development.

Individual variations in the growth spurt.—The chronologic age at which individual growth spurts occur varies between sexes and between individual children of the same sex. Table 1 presents the distribution of the timing of the maximum growth in height for boys and for girls. By dividing the distribution into three groups of early, moderate, and late spurts of approximately equal numbers of children, we see that for boys "early" is between 11 and 13 years, "moderate" 13 to 14, "late" over 14 years; for girls all groups being 2 years ahead of boys, "early" is 9 to 11 years, "moderate" 11 to 12 and "late" over 12 years.

Yearly increments of growth or velocity are more useful to bring sharply into focus not only differences in the timing of the spurt, but also, differences in its magnitude. Figure 4 shows the annual increments in height for 20 children from the early group and 20 from the late; it shows how the early spurt has also more gain than the late one, in both sexes.

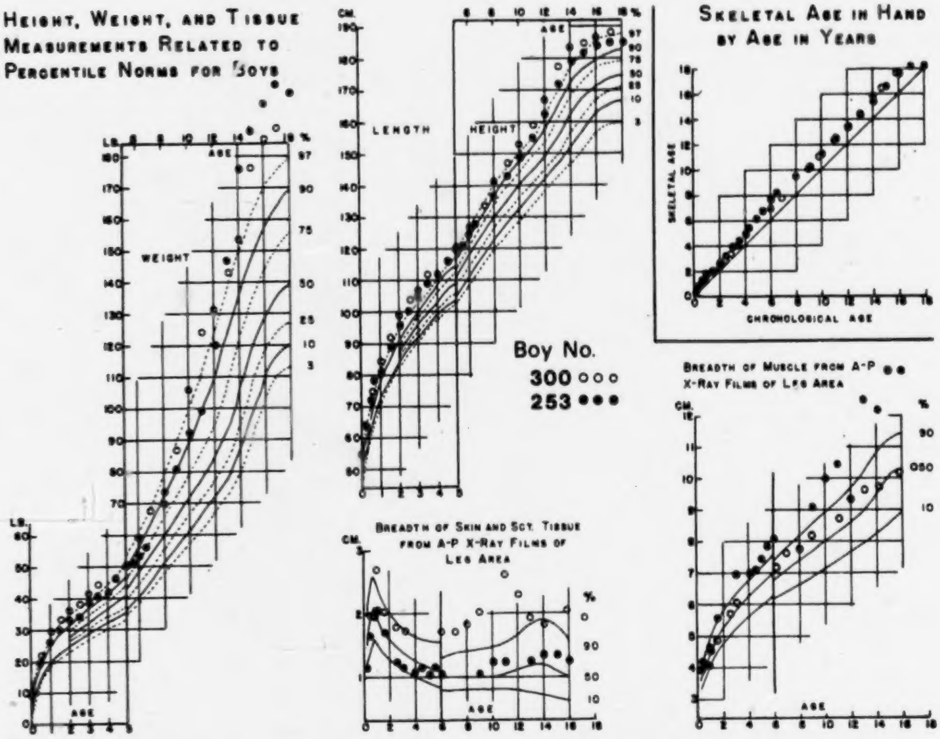

Figure 2.—Growth curves for height, weight, subcutaneous tissue, muscle and bone, and skeletal age of two boys. (Longitudinal Studies of Child Health and Development, Harvard School of Public Health.)

2.—*Segmental Growth*

Different parts of the body grow at different rates and result in changes in body proportions. The head which grew more rapidly during infancy than any other part of the body changes little during the adolescent growth spurt, and what growth occurs takes place more in the face than the skull.

There is a fairly regular order in the timing of the rapid growth of the other parts of the body: chest, length of arms and legs, but the trunk length is the last to increase, and does so after all other parts have stopped growing.

Reasonably precise knowledge on the timing of maximum rapidity of these various parts is well established; the following tabulation indicates the order in which they occur. Maximum benefit is obtained in the treatment and rehabilitation of limbs; fitting, adjusting, and repair of a prothesis if carried out at just the right moment necessary for taking advantage of the timing of growth.

TABLE 1.—*Distribution of the year of maximum growth in height*

Year	Males		Females	
	Number	*Group*	*Number*	*Group*
9-10			5	
10-11			14	Early
11-12	4	Early	21	Moderate
12-13	14		16	Late
13-14	19	Moderate	8	
14-15	17	Late		
15-16	5			
16-17	1			
17-18				
Over 18	1			
Total	61		64	

Sequence of Accelerated Growth During Adolescence in Various Body Dimensions

1. Leg length
2. Hip width
   Chest breadth
3. Shoulder breadth
4. Trunk length
   Chest depth

During adolescence, there is about a year between the peak of leg growth and the peak of trunk growth resulting in an alteration in the relationship of the extremities to total body height; this accounts for the very familiar picture of the clumsiness of the young adolescent, of his long extremities and his fatigue from sitting in class in ill-fitting desks.

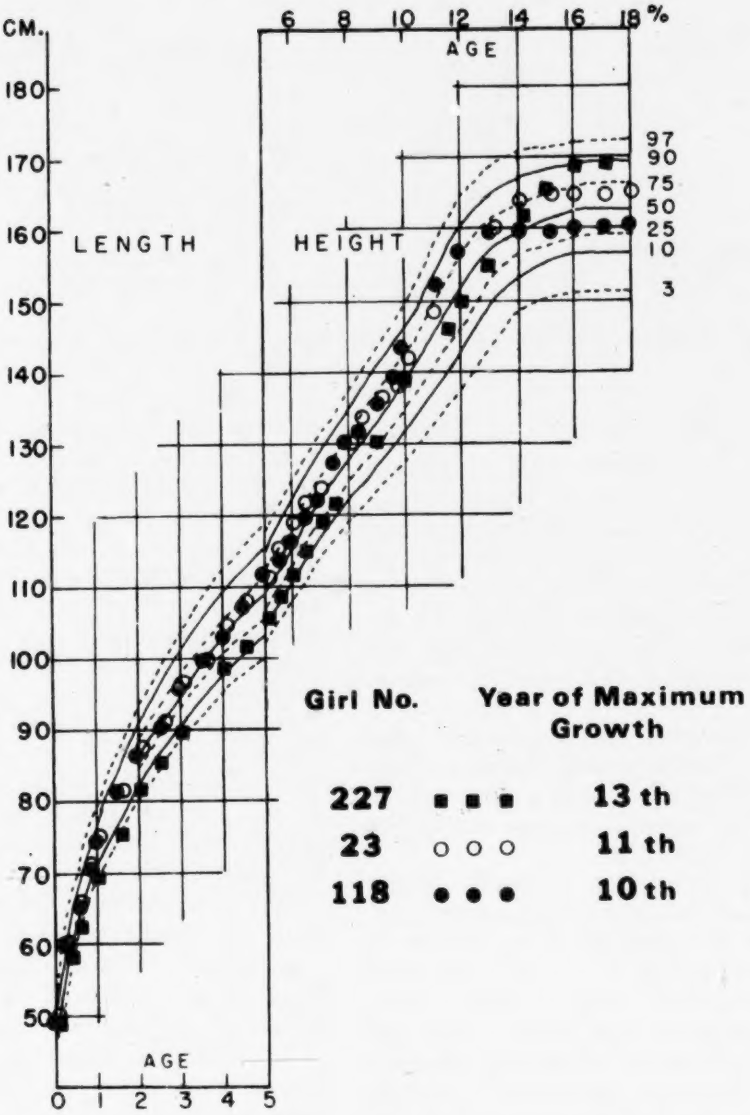

Figure 3.—Height curves of three girls whose timing of the adolescent spurt is different. (Longitudinal Studies of Child Health and Development, Harvard School of Public Health.)

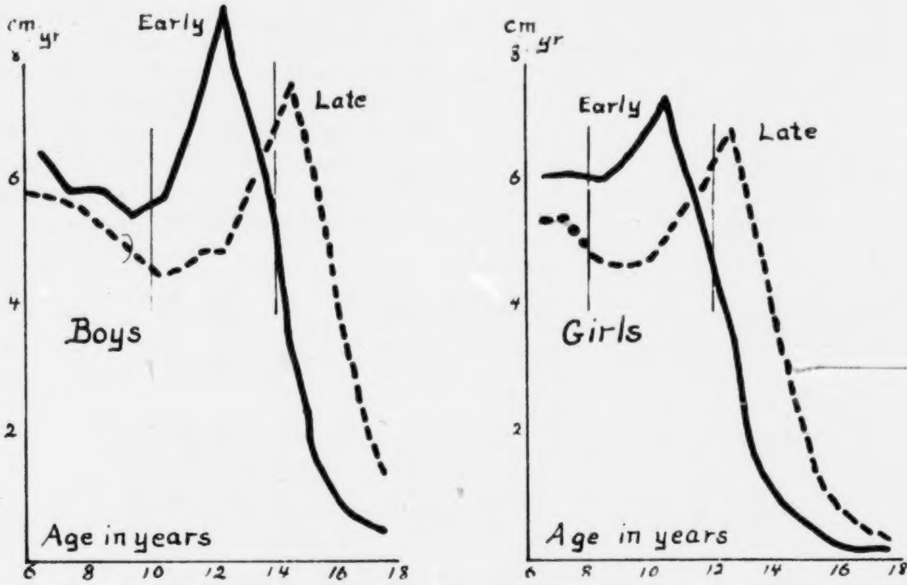

Figure 4.—Annual increments in height of early and late maturing boys and girls (means of 20 in each group) (*6*).

3.—*Growth of Other Body Components*

The pattern for growth in body height and weight is also characteristic of growth of certain tissues, such as bone and muscle, or certain organs, such as those of digestion, respiration, circulation, and excretion. Other tissues and organs follow different growth patterns (fig. 5).

Neural growth.—The central nervous system, the eyes, and much of the auditory system grow rapidly in the fetal period and infancy, more gradually during the middle and later part of the first decade, and decline at a steady rate until sometime after puberty when growth ceases except for a slight increase during the adolescent growth cycle.

Lymphoid growth.—The thymus, lymph nodes, tonsils, and the follicles of the spleen and lymph tissue of the intestines grow rapidly in childhood resulting, by 8 to 10 years, in a total mass nearly twice that found in adults. Their growth rate decreases and ceases about the time of puberty. Enlarged tonsils and adenoids of the young child are characteristic of this growth pattern, and will decrease in size by actually shrinking.

Adipose growth.—Body fat is estimated by skinfold measurements at the triceps and subscapular areas, or by X-rays of the limbs. Correlation is good with more elaborate techniques of measuring fat by water displacement, body radiation counts, or the estimation of lean body mass and subtracting it from the weight. All measurements indicate a pattern as follows: Fat increases steadily and quite rapidly for the first 9 months after birth, slows down for the next 7 to 8 years; accelerates for a year or two then decreases for another year or two before the general adolescent growth spurt and at the time of maximum height increments; fat increases again after that peak year of growth (*10*). This period of maximum growth in height is a good period to help the obese child lose his fat since fat is not only growing at its minimum rate but actually shows a loss, especially in the male. The Follow-up of the Longitudinal Studies of Child Health and Development revealed that obese adults had been obese children at some periods, but, of those who showed obesity during childhood, it was those who remained obese after the growth spurt who were most likely to continue to be obese (*12*). Table 2 gives the distribution of

TABLE 2.—*Adult physique related to childhood*

Childhood physique		Adult physique			
Infancy & preschool	Adolescence	Obese	Medium	Lean	Total
O	O	5	7	2	14
M	O	12	4		16
O	M	1	11		12
M	M	2	39	1	42
L	M		6	3	9
M	L		2	5	7
L	L		10	10	20
Total		20	79	21	120

O = Obese
M = Medium
L = Lean

adult physique related to childhood physique in infancy, preschool, and adolescence; it shows that a child whose obesity was displayed during adolescence only has a 75 percent chance (12/15) of being obese as an adult, whereas a child whose obesity was displayed during infancy and preschool only has an 8 percent chance (1/12) of adult obesity.

Genital growth.—There is little increase of genital growth during early life. Autopsy data show that the uterus and ovaries in the female and the testes and prostate in the male develop rapidly just before and during puberty (*15*) (fig. 6).

The increase in size of the uterus involves both the endometrium and myometrium before menarche (*9*). There is now evidence that during the rapid growth process, the uterus and ovaries are also vulnerable to environmental factors. Good nutrition in the years before menarche may play an important part in establishing the capacity of a girl to reproduce satisfactorily in later life (*13*).

Secondary sexual characteristics.—The various steps in the development of sex characteristics have been well described and classified and can be used as standards for examination (*9*). Their sequence is presented in the tabulations shown below. The most readily observed and regularly appearing features of progress in the development of sex characteristics are synchronized with each other. In boys, the first change to appear is the rapid growth of the testes and scrotum, the growth of the pubic hair in stages described by its quality, density, and configuration; this, in turn, is followed by the growth of the penis. In girls, the stages of the growth of pubic hair are also de-

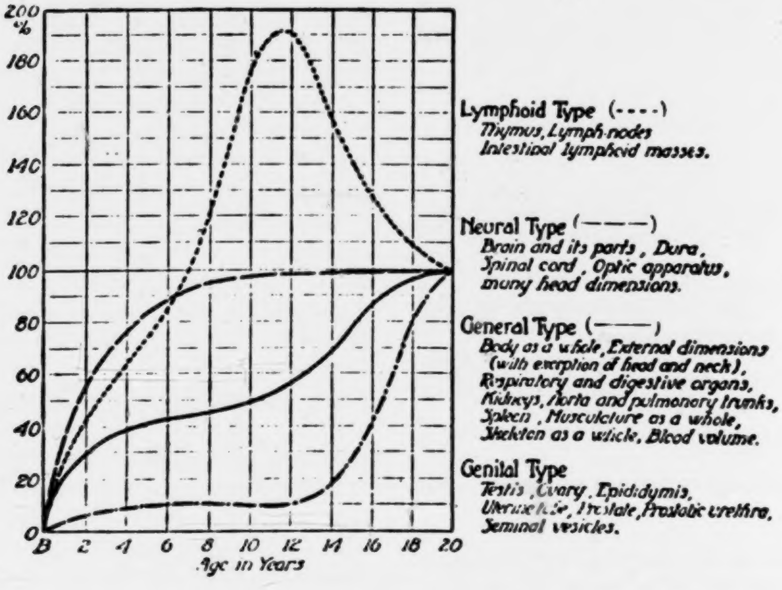

Figure 5.—Growth curves of different body tissue plotted as percent of size at age 20 (*8*).

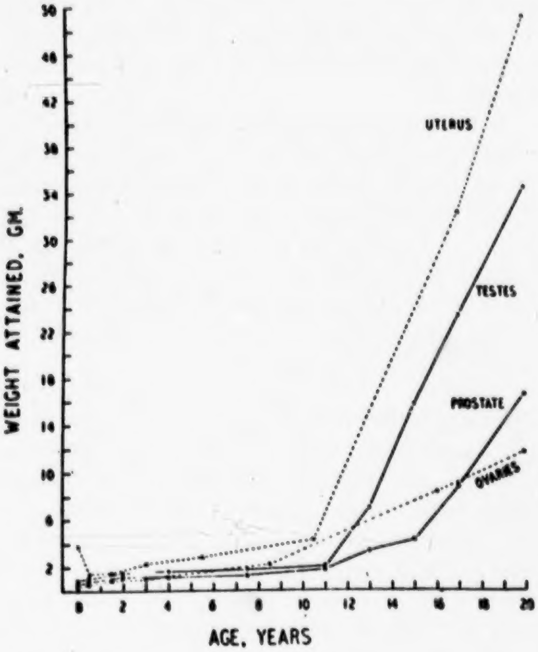

Figure 6.—Growth in weight of the ovaries, uterus, testes, and prostate.
(Scammon, R. E., The Growth of the Human Reproductive systems, Proc. Second Internatl. Cong., Sex Res., 1930.)

fined; simultaneously, there are changes in the breast described in five stages and finally the event of menarche.

Sequence of sexual maturation

Males

1. Increase in the size of the testes over 2 cm.; increased pigmentation and roughening of the scrotal sac
2. Growth of the penis in length and width
3. Sparse, downy pubic hair (about the time of early enlargement of the testes and penis)
4. Development of the prostate and seminal vesicles
5. Pubic hair darker, curlier (within a year after appearance)
6. Pubic hair more extensive with adult distribution (within 2 years)
7. Appearance of axillary hair (about 2 years after pubic hair)
8. Facial hair
9. Voice changes—occur gradually with the early sexual changes; deep voice after completion of sexual maturity
10. Nocturnal emissions—start about a year after the beginning of sexual change
11. Fully mature spermatozoa: variable timing

Females

1. Growth of the uterus
   Growth of the ovaries (not always at the same time)
   Budding of the breasts
   Changes in vaginal secretion from alkaline to acid
   Changes in vaginal bacterial flora
2. Appearance of sparse pubic hair
3. Appearance of axillary hair (about 1 year after pubic hair)
4. Clear vaginal discharge
5. Menarche—about 2 years after first visible changes in the breast
6. Ovulation
7. More regular menstrual cycle: variable time after menarche
8. Fertility, usually more than 1 year after menarche

Skeletal development.—In the fetus, bones are laid down as cartilage. Through biological and chemical processes, fibrous tissue and cartilage are transformed into bones. Bony tissue is radioopaque, while cartilage is not, so that the earliest stages of the ossification process are clearly visible on X-ray film. The process begins at about the 5th fetal month and continues throughout childhood. Ossification proceeds in a constant order among children of all races, first in the clavicle, then in the skull, the long bones, and the spine. The size, shape, and outline on X-ray film of ossification centers can be described; their changes follow a very orderly sequence of features common to most children at a given age. Age specific descriptions for the average child are the standard (*4*).

The film of an individual child is compared with the standard film which most closely matches; this determines his skeletal age; he is then termed average, retarded, or advanced according to deviations in months or years from the expected level for his chronologic age. There are standards for different segments of the body including the knee and foot, but the standard of the hand and wrist is the most practical because of the multiplicity of ossification centers in this region and the safety with which this region can be exposed to X-rays.

Relationships between measurements of growth and maturity.—The adolescent growth spurt in height is closely related to the stages of development of his secondary sex characteristics. For example, at the onset of the height spurt among girls, breasts are at the budding stage and pubic hair is starting, but still sparse and only slightly pigmented. The year of maximum growth coincides with the primary breast development, and pubic hair almost adult in type with a smaller area covered. Menarche follows within a year of the peak maximum growth. The same close relationship exists in boys. Therefore, height spurt is a very good indicator of sexual development and when sequential height measurements are available, one can detect the beginning of the spurt, predict coming events and offer guidance and counseling to the adolescent.

Skeletal age is a good indicator of biologic maturation and correlates well with the other indicators. Children who are advanced in their skeletal age reach their maximum growth early and tend to show a more rapid growth than those whose skeletal age is delayed. Figure 7 shows on the left the height and weight of a girl plotted against her chronologic age. Around the age of 8, both height and weight curve deviate upward from their usual position. On the right side, the same measurements are plotted against skeletal age and the curve obtained moves along at the expected progress.

4.—Physiologic Changes

There are considerable changes with age in various physiologic functions, but because there are not enough longitudinal observations, knowledge of these patterns of change is very limited.

It seems that most such changes follow a trend of an increase, then a maximum followed by stabilization or decline, but there is great variation of the chronologic age at which each reaches a maximum level.

Some physiologic functions are closely related to size and rate of growth, their measurements reach a maximum during adolescence; for example: blood volume, number of red blood cells, hemoglobin, blood alkaline phosphatase, heart rate, systolic blood pressure, vital capacity, muscle strength and sex hormones (discussed elsewhere). The rate of change for these measurements increases earlier when the adolescent spurt is early and increases later when the spurt is late. These changes are more closely related to growth spurt than to chronologic age.

Some functions, although increasing significantly during adolescence, continue to increase throughout life, for example: blood pressure, vital capacity, or muscle strength.

Other physiologic measurements reach maximum values earlier in life; for example, plasma fibrinogen or globulin reach adult values at 3 and 4 years, respectively, and do not change at adolescence.

In the past it was believed that increase of physiologic functions in adolescence meant also increase in their instability or day-to-day fluctuation and that unstability had a relation to psychologic reactions; a longitudinal study of blood pressure, pulse, and temperature in adolescence dispelled this notion (*2*).

Presently, newer, highly sensitive methods for measuring blood concentration of hormones, amino acid, or lipids are being available and might be used in the future as indicators of physiologic maturation. In addition, investigators are more conscious of the fact that physiologic measurements are more liable than somatic measurements and they are designing more sophisticated procedures both for collecting and analyzing data. This will increase our knowledge substantially.

5.—Factors Influencing Growth

The process of growth and development is a constant interaction of three determinants: genes, hormones, and environment.

Genes.—Individual differences are the expression of innate growth potential and its interaction with the environment. Each child grows according to some mechanism within his genes which determines the rate at which he grows, the time of his maximum growth in height, the rate of his skeletal and sexual maturation, and his ultimate height.

Some of the child's attributes, such as his blood type, eye color, and quality and color of hair, are known to be genetically determined; they are controlled by a relatively small num-

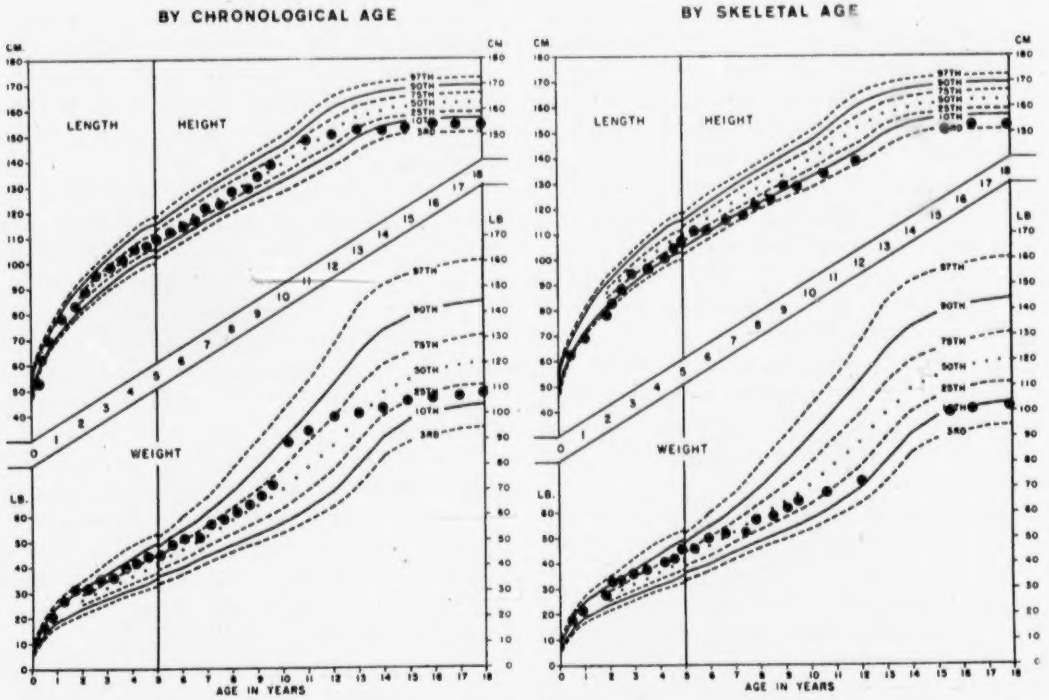

Figure 7.—Growth curves for height and weight of a single girl by chronological age and by skeletal age. (Longitudinal Studies of Child Health and Development, Harvard School of Public Health.)

ber of genes and are very little influenced by his environment. Other attributes such as the general pattern of his growth, his rate of growth or his body build are also primarily determined by genes, but the number of genes involved is large: those affecting size or body type are not the same as those affecting the rate of growth. Their role has been brought to light through studies of twins: identical twins share similar characteristics of these attributes more frequently than fraternal twins or just siblings, but still, studies of genetic determinants of these features have not yet disclosed a solid explanation. Such studies are difficult to carry because patterns of growth and maturation are modified by the environment. An appealing explanation would be that the child's genetic composition determines his growth potential as a set of different growth patterns corresponding to the different environmental conditions that the child may encounter. The particular pattern a child follows expresses his genetic potential under the environmental influences he is exposed to.

However, genetic and environmental factors are very rarely separable into categories; in searching for the causes of the unusual size or unusual growth pattern of a child, attention should be paid to the size and growth patterns of his parents and siblings. Such interpretations are relatively easier in adolescence, because often genetically determined characteristics unfold only later in childhood.

Race.—Although difficult to separate from genetic and environmental factors such as nutrition, there are some attributes of growth apparently related to race such as body proportion. Changing the environment of children of a given race brings changes in their growth and maturation rate comparable to that of other children in the same environment, for example, Japanese children raised in California (*3*). Differences which were thought to be racial are shown to disappear when different racial groups share the same environment.

Sex.—Females seem to start life at a more mature level than males and continue to grow and mature at a faster rate; they are generally ahead of males in acquiring fine motor development and motor coordination, but, in general, the patterns of growth are not strikingly different between boys and girls in childhood. At the beginning of adolescent growth, the developmental differences become most evident: girls begin the growth spurt, the skeletal and sexual maturation are about 2 years earlier than boys; but boys have a much greater and more vigorous spurt, which, added to the fact that they had 2 years more to grow, makes them, on the average, taller than females at maturity.

In general, the physical development of the female fluctuates less and she is more resistant to environmental factors.

Endocrine glands.—The anterior pituitary, the thyroid, adrenals, and gonads determine or influence growth and development, but the ultimate rests with the hypothalamus.

In early childhood gonadal and adrenal hormones are not excreted in appreciable amount. The activities of the endocrine glands are geared toward promoting somatic growth. Increase in linear growth, which is the major morphologic change, as well as body configuration, are about the same in both sexes. The anterior pituitary growth hormone is necessary for growth, but seems to be of little importance during the first 2 years (hypopituitary dwarfs grow normally for the first few years): in addition, this hormone has no action on bone maturation.

Thyroxine, secreted by the thyroid, is essential for growth from the fetal period on; it is essential for proper development of the brain, the teeth, and orderly ossification and skeletal maturation. (Cretins are retarded in their skeletal age; their treatment with thyroxine induces normal skeletal maturation, and overdose can advance it.) The thyroid initiates and maintains ossification until the time of puberty, but it does not complete the process of skeletal maturation.

In late childhood there is a sharp change in the function of the endocrine glands. The initiation of the complicated sequence of anatomic and endocrine events is related to the maturation of the central nervous system. Our knowledge of neurophysiology does not allow us to define clearly the physiology of initiation of growth, but we can say that the hypothalamus acts as a "biologic timer." Apparently, during childhood the hypothalamus is sensitive to the small quantity of sex hormones present and responds by inhibiting the production by the pituitary of gonadotropic hormones which would stimulate ovaries and testes to increase their production of hormones. As the hypothalamus matures, it loses that sensitivity; this frees the pituitary to elaborate tropic hormones which cause increased activity of the gonads and adrenals. Androgen and estrogen in turn stimulate the growth of the long bones, and the maturation of the epiphysis. Androgens have the stronger action over a larger period; this explains the difference in the amount of growth during adolescence between sexes and the greater adult size of males.

Both hormones stimulate the maturation of reproduction. Both have a self-limiting effect; they not only stimulate cartilaginous epiphyseal cells of the long bones effecting their growth in length, but they also accelerate the final ossification of the discs which cause complete cessation of growth in height. Possibly, when sex hormones reach a certain level in the blood they stimulate the hypothalamus which, again, inhibits the pituitary.

Illness.—Chronic or prolonged illnesses which interfere with metabolism retard growth —but the short term and common childhood illnesses do not permanently affect growth (*11*). Data from the Longitudinal Studies of Child Health and Development indicate that an even greater amount of common illness was found among children who were the tallest (*14*). The incidence of illnesses is very low in adolescence, considerably less than at earlier ages (*15*); the decline is particularly striking in the incidence of respiratory infections(*16*).

Nutrition.—The Longitudinal Studies of Child Health and Development have shown the close relationship between growth in height and protein intake during entire childhood or during specific periods such as preschool or adolescence (*14*). They also showed there was an increase in caloric and protein intake associated with increased rate of growth in height during adolescence, even taking into account the differences in weight of the early and late group. There was a mean increase of about 1½ grams of protein per day associated with one centimeter per year increment in height (1.5 gm. for boys and 1.7 gm. for girls) (*6*).

Figures 8 and 9 present total caloric and total animal protein intakes of early and late maturing groups. The early maturing increase their caloric or protein intake earlier than the late maturers. An interesting fact is that girls curtail their caloric intake as soon as they reach their growth peak, and the early maturing girls curtail their intakes more and earlier. This, of course, was often done unwisely and reduced protein and other nutrient intakes as well.

Adolescence is also a key period in acquiring adult dietary patterns. In investigating the relationship between childhood and adult dietary intakes, an extensive correlation matrix was calculated showing the relationship between calorie, total protein and animal protein intake at each age. Throughout the data, the postadolescent intakes are more highly predictive of adult intake than are the intakes in early childhood. Analyses of the correlation between intake at one period in childhood suggest a somewhat consistent (from year to year) dietary pattern that is followed during the preschool and preadolescent periods, but a major change may occur during adolescence to a dietary pattern that tends to persist into adulthood (*12*).

Secular trend.—A trend toward larger children exists since the middle of the 19th century in many parts of the world. Improved living conditions, improved nutrition, and freedom from major infectious diseases are among the major factors contributing to this trend. This trend is more marked in the low socioeconomic groups and results in part from the fact that a greater number of children in each generation live under conditions that permit the realization of their growth potentials.

The trend is not only toward larger, but also toward faster maturing children—adolescence

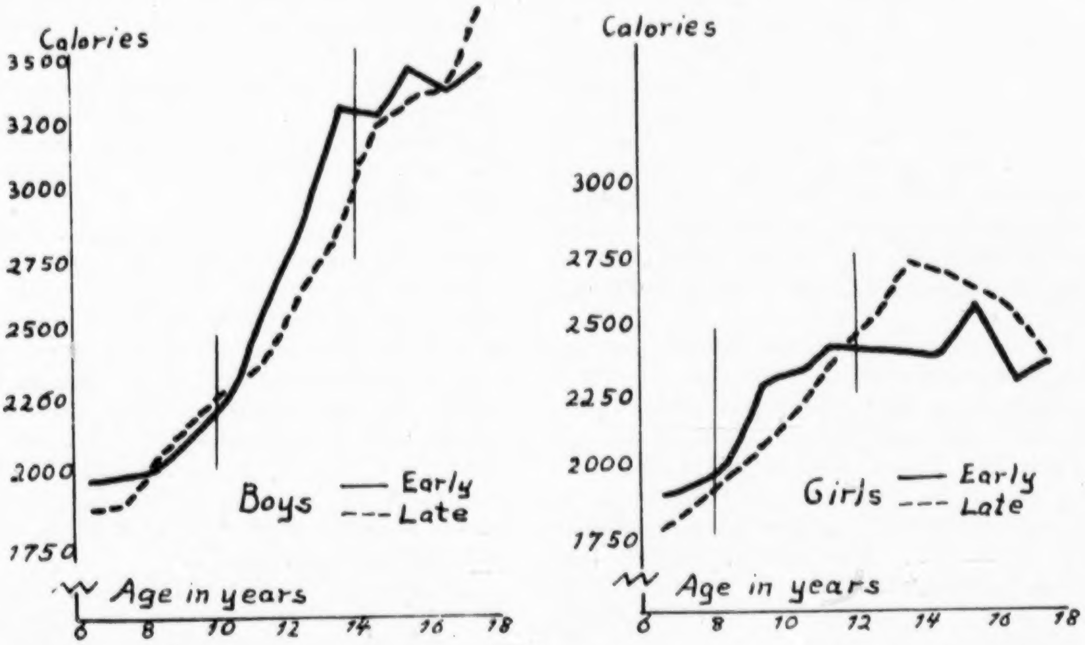

Figure 8.—Total caloric intakes of early and late maturing boys and girls (means of 20 in each group) (*6*).

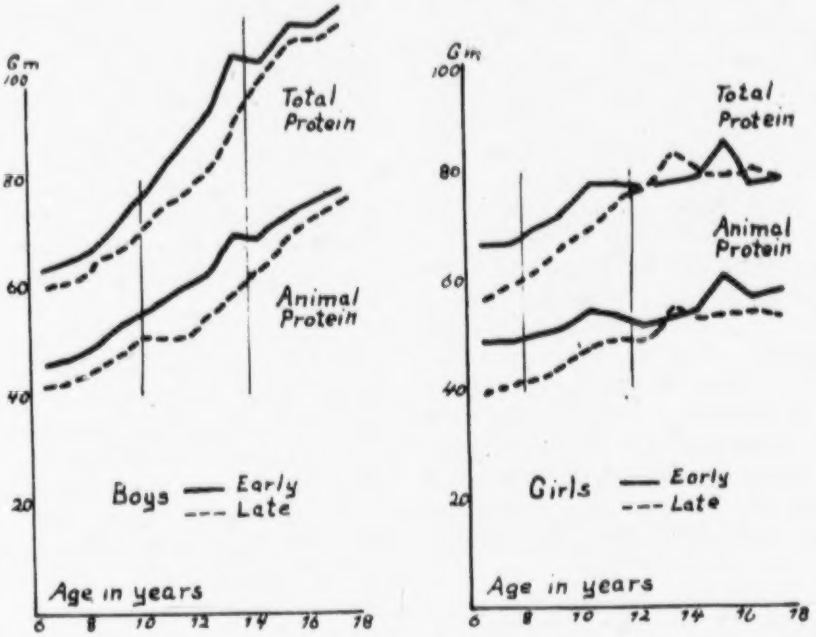

Figure 9.—Total and animal protein intakes of early and late maturing boys and girls (means of 20 in each group) (*6*).

occurs earlier. The girls in the Longitudinal Studies of Child Health and Development had menarche on the average, 1½ years earlier than their mothers (*11*). The height spurt of today's adolescents is also more spectacular. While adolescents grow more and faster, they also stop growing sooner.

II. Behavioral Changes

The rapid and great physical and sensory changes of adolescence alter the child's views of himself and others. Adolescence illustrates more than any other period the close relationship of the biologic and behavioral development.

One major psychologic task set for the adolescent is adjusting to these changes. Since somatic growth and sexual maturation are the major changes, adjusting to sexual drive and changes in physical appearance and to the unfolding body type become the fundamental task for the adolescent. In addition, it defines a fundamental task for the professional persons working with the adolescent; that is, knowing and interpreting to the adolescent the meaning and adequacy of these changes in terms of the adolescent's role at home and in school and in helping him to prepare himself to function according to the limits and potentials of his growth and development pattern in a way that the adolescent learns to like the kind of adult he sees himself becoming.

The adolescent is very interested in himself and wants to find out who he is, what he is like, and what he will be, particularly how tall. He compares himself with his peers and does not like to be different; he thinks not being average means abnormal. The lack of understanding about age differences in developmental events is often one of the principal causes of concern for the adolescent as well as for his family.

Delayed maturation in the great majority of cases is physiological. There are up to 6 year differences between late and early maturation without meaning any abnormality; but the child who develops slowly and late is unhappy. In our society, we group children on the basis of chronologic age. The late maturer is at a disadvantage being shorter, lighter, and less muscular. He does not perform well in athletic activities requiring strength and endurance; he is often left out of team sports without their accompanying glamour, and as a consequence, he is often left out of social activities as well. In addition, his sex characteristics being slow to develop, the late maturer worries about his sexuality; he avoids undressing at the gym. He really feels held back and the emotional problem so established exceeds the simple biologic fact. At times the emotional problem can get out of proportion, so much that when his growth continues while others have stopped growing, and he even ends up taller than his peers, he may not handle the emotional aspect. Figure 10 shows the height, weight and growth curves of two girls—an early and a late maturer. The early maturer was well ahead in size and maturation; she was popular. The slow maturer was so disinterested in school that she was considered "dumb"; she was unhappy. Later when she caught up with growth she still could not shed the emotional strain experienced and as an adult, although married and a mother, she still remained aggressive and angry. The disadvantage of late maturation is more acute in boys; late maturing boys have usually stronger feelings of inadequacy and rejection (7).

Girls are less concerned when their height growth is not average; they are upset when their breast development or menarche is delayed, but they have fewer problems.

Early maturation brings few other problems. Such an adolescent is stronger physically, more likely to excel in sports and more self-confident. He looks older than his age, and often

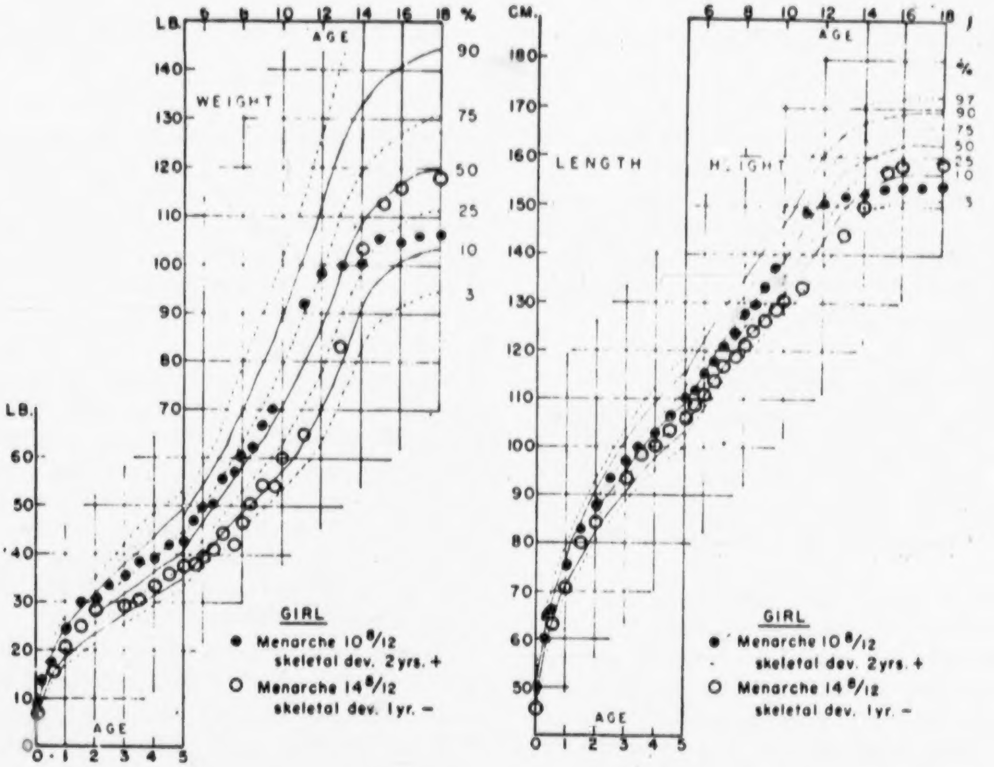

Figure 10.—Growth curves in weight and height of an early and a late maturing girl. (Longitudinal Studies of Child Health and Development, Harvard School of Public Health.)

parents and teachers expect more mature performance matching his physique and put undue pressure on the adolescent. Problems are engendered when he is ahead only on biologic maturation and lags behind in emotional, social, or intellectual development. The early maturing girl finds herself isolated from her classmates; she attracts and is interested in older boys and her behavior is easily considered promiscuous.

Body size also has a greater significance in the psychosocial area than physical: only very extreme, unusual sizes, such as dwarf or giant, are pathologic.

Tallness for age is rarely a problem with boys and is more likely to be considered as such by girls, not only the girl herself but also her mother, especially if she herself had been unhappy with her size. A tall adolescent girl can be tall only temporarily if she is an early maturer, or she may be tall by her genetic endowment and will remain tall. This is the case of average or late maturers who are already tall. The advice to give is very different in each case. In the first instance, it is reassurance; in the second, it is helping the girl to accept her size, seeing its advantages and understanding it is a relative rather than an absolute matter. The desirable height of adult women is more a question of fashion in a given society, a cultural attitude. In very rare cases when the psychological problem is great, the possibility of reducing the growth rate and accelerating skeletal maturation can be done with estrogen therapy—but to be most effective, it has to be done before menarche, continued until final skeletal maturity, and in addition, the long range effects have not been sufficiently studied.

On the other hand, shortness is more a problem with boys. The great majority of short adolescent boys are late maturers, and need only reassurance and facts about possible further growth. The short adolescent boy who is an average or early maturer will end up a short adult and needs guidance in accepting himself; he should be guided toward sports requiring speed and agility rather than muscular strength so he is in a situation where he can excel and gain some self-confidence. Here again, when the emotional situation is great, temporary stimulation of growth with testosterone can be used; but it also stimulates skeletal maturation, therefore, premature closure of the epiphysis and cessation of growth making the treatment self-defeating. It should be carried out after careful consideration and for a brief period of time.

Many of the other sources of anxiety for the adolescent are temporary exaggeration of normal changes such as acne, menstrual irregularities and discomfort, problems of appetite and weight gain, some unilateral or bilateral swelling of the breasts of adolescent boys. Adolescents vary in their capacities to adapt and carry through these problems; the most common effects are temporary and moderate and are largely overcome as growth and development proceed. These problems are not intrinsically serious; the importance of their effects depends in large measure upon how successfully the individual adapts to them.

The adaptation of the adolescent depends not only on his own personality, but on his family, his teachers, physician, counselors, and peers; on their attitudes and relationship to the adolescent and on how skilled they are in convincing him that he is normal despite his differences from his peers.

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Questions Following Dr. Valadian's Presentation

1. How does the year of maximum growth relate to onset of menarche?

Answer: When maximum growth is attained, menarche will occur within one year, on the average.

2. How does height during the maximum-growth year compare to ultimate height?

Answer: In figure 10 we see that the two girls start out together on the growth curve as far as height is concerned. One girl has an early growth spurt, matures early, but she ends up as a shorter woman. The other girl remains small longer, the spurt occurs much later, but she ends up being the taller person.

3. What percent of those obese in adolescence were also obses in adult life?

Answer: 45 percent who were obese as *children* were obese as adults. 35 percent who were obese as *infants* were obese as adults. 85 percent who were obese as *adolescents* were obese as adults.

4. Does the premature child usually have a late maturation?

Answer: Premature babies were not kept in the longitudinal study. Therefore, we have no data on this.

5. Do your data provide evidence of problems of poor diet which carry over into adulthood?

Answer: There are problems of reproduction in those whose diets were low in protein. We are now studying other indexes of general health.

6. Are there growth standards or charts for ethnic and racial groups other than Stuart's North Europeans?

Answer: There are many standards developed in other countries for various ethnic groups. Criteria for selection of children by Dr. Stuart included that both parents be born in the United Stated and that grandparents be from North European countries. Actually, the majority were Irish.

7. Are Stuart's curves applicable as standards for other groups?

Answer: Many longitudinal studies were started some years ago, particularly by developing countries where it was felt that the Harvard standards were not applicable in their situation. Then, as better nutrition became available, the new generation grew taller and these countries found that their present group approximated the Harvard standards. Standards are only a guide to changes occurring. The base population needs to be considered. A study compared Japanese children born in California with those born in Japan. Since World War II the eating habits of the children are changing, resembling more and more the American pattern. With the change toward the American pattern, the children in Japan were resembling those in America. Thus, it was felt that the influence was more environmental than racial. Mitchell's study of Japanese children showed that after the war, when more food was available, children grew taller, especially during adolescence. She had Japanese records, going back "hundreds of years," for comparison with recent growth patterns.

A REVIEW OF TEENAGE NUTRITION IN THE UNITED STATES

RUTH L. HUENEMANN, D.Sc., *professor of Public Health, University of California, Berkeley, Calif.*

I am happy to meet with all of you and to share your thinking on teenage nutrition. I feel confident that a meeting of so many good minds can and will result in at least partial solutions to some of the problems involved in maintaining and improving the nutrition of young people in our land.

It is my assignment to continue with the discussion of background information on the youth of today by reviewing some highlights of what we know and do not know about the nutrition of teenagers. I plan to touch briefly on the following topics: (1) Nutrition needs of adolescents in relation to growth; (2) ways of assessing nutritional status; (3) what some typical studies tell us, and (4) some matters for concern, as I view the situation.

Growth and nutritional needs.—First, a brief word about the nutritional needs of adolescents. We all know that adolescence is a time of rapid physical growth, second only to the prenatal and infancy period in rate. Since calorie and most nutrient needs tend to parallel the growth rate, it is obvious that the adolescent's needs are higher in proportion to body size than those of younger or older people. What we sometimes forget is that needs also decrease as the rate of growth slows. I sometimes wonder whether all of our concern about adolescent girls is justified. We nutrition educators have spent years telling mothers not to be concerned about the decreased appetites of their children during their second year of life. Do we need to remind ourselves that many girls by the age of thirteen have already experienced their most rapid growth and are therefore, perhaps, entitled to a decrease in appetite during the early or middle teen years? As long ago as 1932, Wait and Roberts (*16*) in a careful study of the total energy needs of girls aged 10 to 16 years found that calorie requirements rose to a peak just before puberty at an average age of 13 and then dropped. Eppright and coworkers (*5*) in a study of the diets of school children in Iowa in the early 1950's, also found that girls had reached their peak intake at about 12 years. Boys, on the other hand, reached their maximum intake at about 16 years. Heald (*7*) has confirmed their observation that maximum growth is likely to occur just before puberty and then decline rapidly.

Assessment of nutritional status.—How can and do we go about assessing nutritional status? Traditionally, we use four major kinds of measurements: Anthropometric, including height, weight, skinfold thickness, and others; biochemical determination of nutrients or metabolites in blood and urine and sometimes other body tissues; clinical assessment with particular attention to signs and symptoms frequently characteristic of malnutrition; and dietary intake. These various measurements, not one of which is definitive by itself, tend to complement each other, for example, a vitamin C intake of only 5 mg. per day and a plasma serum level of 1.0 mg./100 cc. would lead one to think that the low ascorbic acid intake was atypical, especially if there were no clinical signs indicative of deficiency.

Perhaps we should emphasize that a combination of the four kinds of measurements provides information from which we can *derive* an assessment of the nutritional status of an individual or group. To date we have no definitive methods. There is tremendous need for development of measurements that would tell us what we really want to know, that is, are the body enzyme systems functioning at optimum level for health and well-being? To date we have developed only a few measures that do this, for example, the measurement of erythrocyte transketolase as an indicator of thiamine nutrition. I hope we can and shall challenge our colleagues in biochemistry to develop many other such meaningful measurements. I personally believe that we as nutritionists, dietitians, home economists, and others in related disciplines must and should take the lead in urging that resources be made available for the development of methods that suit our needs. We have been content for too long with using time-consuming, costly methods that do not really give us the answers we want and need.

Those of us whose focus has been chiefly on the food aspect of nutrition may need to remind ourselves occasionally that food intake by itself cannot spell nutritional health. For this reason, dietary intake studies, valuable as they are, are not by themselves a valid measure of nutritional status. "There is many a slip 'twixt the cup and the lip," and also between the lip and the functioning, living cell or tissue. The so-called iron-deficiency anemia in teenage girls, for example, does not necessarily indicate a low iron and protein intake. It may be due to other causes. An old formula by Kruse (*12*) summarizes the situation:

$$\text{Nutritional Status} = \frac{\text{Nutrient Supply to Tissue}}{\text{Tissue Needs}}$$

Many physical, social, biological, and psychological factors in addition to food intake affect both the numerator and the denominator of that equation.

We are all well aware that many dietary studies have been made without also doing biochemical, clinical, and anthropometric measurements. Is it wrong to do this? Of course not. These may serve a worthwhile educational purpose in teaching teenagers something about nutrient values and desirable nutrient intakes, as well as other purposes. They may provide clues toward possible dietary lacks or excesses that should be checked out by other measures. We do need to be careful, however, not to mislabel or misinterpret them. They are not measures of nutritional status. After calculating the nutrient value of a diet, we usually compare these calculated values with a recommended dietary allowance. We need to keep reminding ourselves that failure of a group or individual to meet a certain arbitrary dietary allowance does not necessarily spell malnutrition. Teenagers vary greatly in their nutrient needs.

The Recommended Dietary Allowances of the Food and Nutrition Board, with which we usually compare such intakes, are clearly labeled as "*goals* for planning food supplies and guides for the interpretation of food consumption records of *groups* of people." Obviously, then, each nutrient value in the table should be viewed not as a single value but with a scatter about it as great as the range of needs of the group for which it is intended, in addition to a safety margin. How large a scatter should be allowed for varies with the nutrient. Many nutritionists view these values with a spread of ±50 percent.

What about comparing findings with a food guide, such as the Basic 4? There may be reasons for doing this, but let us recognize that the four food groups are not an infallible guide to nutrient adequacy. They may serve a useful purpose in teaching *beginning* nutrition. By the teen years present-day youth is ready for a more sophisticated approach. Furthermore, as I shall point out later, our food supply differs vastly from this pattern of four basic groups.

Another point of caution: teenagers tend to vary greatly in their nutrient intake from day to day. In a study we did in Berkeley (*6*) one girl varied by 4,500 calories from one day to the next! Hence, a short sampling period, such as a 24-hour intake, is quite likely not to reflect the intake over a period of time, and it is the long-term intake that matters. As you probably know, work has been done (*2*) that shows that a 24-hour intake may characterize the nutrient intake of a group. Let us keep in mind, however, that those found with deficient or excessive intakes on any one day may well have a different intake on the next day. Thus, even though the *group* profile may not change, that of individuals may.

Alarming reports on the nutritional state of the American teenager can and have resulted from mislabeling and misinterpreting dietary studies. Let us remember that it does our cause no good to cry "Wolf!" too often.

Study findings.—What have studies using clinical, biochemical, anthropometric, and dietary assessment, or, only some of these methods told us about the nutritional status of American teenagers?

Perhaps the first fact to point out is that to date there has been no nationwide study of a statistically valid sampling of American youth. The first of these is now in progress under the sponsorship of the National Center for Health Statistics. It is the Health and Nutrition Examination Survey—sometimes called HANES. The plan is to maintain surveillance of the health and nutrition of the American people by examining a national probability sample of the civilian, noninstitutional population aged 1 through 74 years, every 2 years. I think we could be helpful by giving our support should the survey teams come to our communities.

Many of you have probably seen the preliminary report of the 10-State Nutrition Survey, the survey recently completed under the guidance of Dr. Arnold Schaeffer (*15*). Sampling for this study was planned to include primarily the low-income population. So far only hemoglobin levels, serum values for vitamins A and C, and urinary riboflavin excretion levels have been reported (table 1).

TABLE 1.—*Ranges in percent of 10- to 16-year olds deficient and low in 10-State survey*

	Deficient	*Deficient and low*
Hemoglobin	0.5–2.9	6.3–31.0
Vitamin A	.0–6.0	2.6–26.6
Vitamin C	.0–2.7	.5–13.0
Riboflavin	.0–5.9	2.7–30.9

Note the tremendous difference between States shown by these ranges, particularly when "low and deficient" are grouped together. These should caution us against overgeneralization.

The 1965 Household Food Consumption Survey of the United States Department of Agriculture included assessment of the food intake of certain groups of individuals (*3*). Approximately 1,400 children of each sex aged 12 to 19 years inclusive reported their food intake for the preceding 24-hour period to a trained interviewer. The mean caloric intake for the boys was highest for the 18- through 19-year-old group (3,049), but only slightly higher than that of the 15- to 17-year-olds (2,989). As in studies previously cited, the 12- to 14-year-old girls consumed the most calories (2,146). (The spread around these figures is not given in the preliminary report.) In the case of the boys, average intakes met or slightly exceeded the Recommended Dietary Allowances. Girls' mean iron intake was about 11 mg., definitely less than the recent Recommended Allowance of 18 mg. Vitamin A and thiamine were also slightly below recommended amounts. Obviously, some intakes must have been below the mean.

No other studies have been made of teenagers for the United States as a whole. Numerous studies have been made of smaller groups. We shall cite a few of these. Hodges and Krehl in 1965 (*9*) published some of the findings of a study of a statistically valid sampling of Iowa children in grades 9 through 12. Again, mean values both for nutrient intake and biochemical measurements met usually accepted levels of adequacy, but a small proportion was low in hemoglobin and vitamins A and C blood levels. Calorie and protein intakes appeared to be more than adequate.

In a longitudinal study of teenagers in Berkeley, Calif., on the basis of four 7-day dietary records, Hampton and others (*6*) reported that even though mean intakes of all nutrients except iron and calcium met or exceeded the Recommended Dietary Allowances, 15 percent of the girls failed to meet two-thirds of these Allowances for vitamins A and C, while 10 percent of the boys failed to meet this level for vitamin A and 30 percent for vitamin C. Interestingly, there were no really "low" protein intakes, but approximately half of the girls were "low" in iron and calcium (under two-thirds the Recommended Allowance). Even though roughly 10 percent of both boys and girls consumed less than two-thirds the Allowance for calories, obesity was not uncommon, as indicated by table 2. In part this obesity could be accounted for on the basis of inactivity. Despite "busyness" and crowded schedules, our boys and girls were extremely inactive, as shown in figure 1. It is our impression that such inactivity is not uncommon today and that this, rather than eating huge amounts of food, is responsible for much of the obesity we see. Numerous studies have documented the observation that the obese do not necessarily eat more than their leaner peers (*1, 4, 11, 14*).

A study by Wharton (*17*) of teenagers in three high schools in southern Illinois on the basis of 3-day diet records reported generally lower nutrient intakes than the Berkeley study and a much higher proportion of both boys and girls who failed to meet two-thirds of the Recommended Allowances.

The earlier studies of teenagers made in eight States during the period 1947–58 under the auspices of the experiment stations and summarized by Morgan (*13*) showed similar variation from one locale to another. Generalization is therefore difficult. Iron intakes of girls, however, were commonly low and some groups and individuals had low intakes and low blood levels of vitamins A and C. Low intakes of calcium were also fairly common.

It is common knowledge that dental caries is highly prevalent among teenagers. It is interesting to note in this connection that even though our overall caloric consumption in this country has decreased over the years, our sugar consumption has increased and now stands at about 100 pounds per person per year. Fluoridation of water supplies is also not yet a universal achievement.

Reports on the effects of teenage pregnancy, "the pill," and drug abuse on nutrition are now only beginning to appear. Some of you will have read the recent article by Hodges (*8*) in which he makes an interesting comparison between the nutritional effects of oral contraception and normal pregnancy.

Of importance for nutrition education programs are the numerous studies on teenagers' values and attitudes toward health, nutrition, and food and eating practices. We cannot review them here except to say that there is

TABLE 2.—*Prevalence of "obesity"*

Item	9th grade		10th grade		11th grade		12th grade	
	Percent	Number	Percent	Number	Percent	Number	Percent	Number
Boys								
Mild obesity (20 percent body fat)	5	23	6	25	9	44	9	37
Marked obesity (25 percent body fat)	6	27	7	29	5	22	5	20
Girls								
Mild obesity (25 percent body fat)	8	41	9	42	10	42	10	41
Marked obesity (30 percent body fat)	3	16	3	17	7	27	4	16

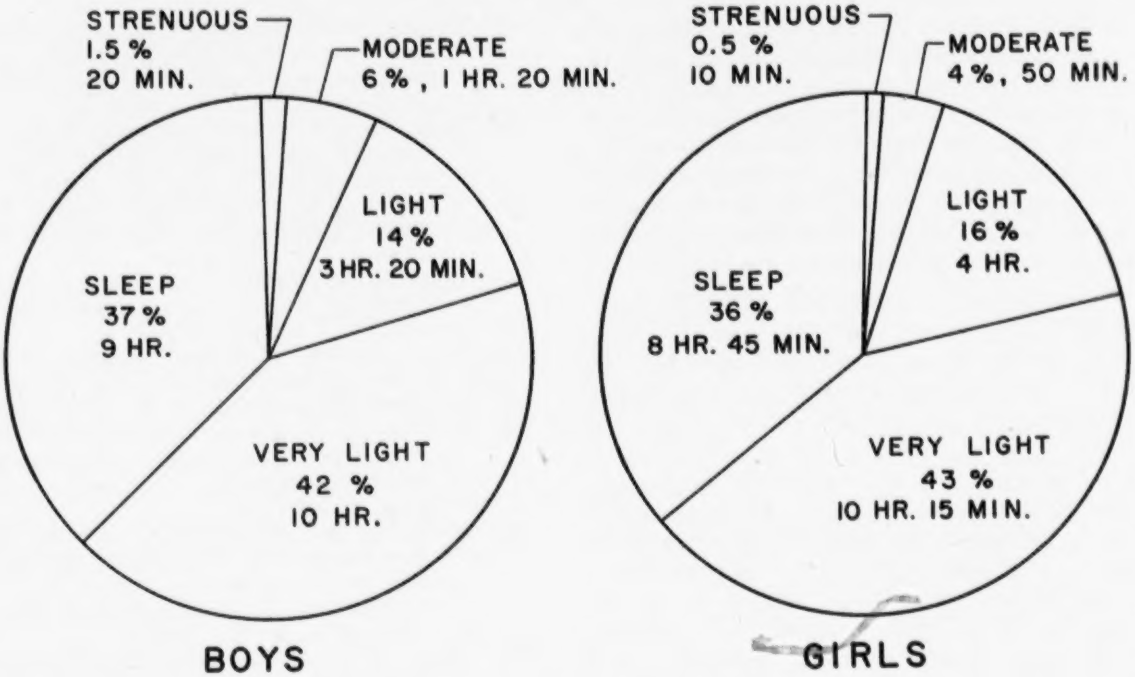

Figure 1

ample evidence that teenagers are interested in their own body size, shape and development, and in their own eating practices.

Some matters for concern.—In summary, on the basis of evidence available to date, I would say that (1) we have no information as yet on the nutritional status of American teenagers as a whole, and (2) studies of groups indicate tremendous variation in measures of nutritional status and tend to support the view that there is a proportion of the teenage population, it is hard to say how large, with nutritional problems. The major problems appear to be dental caries, obesity, and anemia in girls and in some boys. Less than desirable levels of vitamins A and C have been found in some teenagers. Individuals and groups in less-than-desirable nutritional status need to be identified and sought out for nutritional help.

Finally, there are considerations that probably outweigh all of those I have tried to summarize from the literature. The first of these is that our entire way of life is changing more rapidly than we, as educators, have changed our approach. One major change is in our food supply. More and more, we buy already prepared or partially prepared, convenience foods and manufactured foods, such as the soybean "meat" products. Laboratory made nutrients are being added to foods. These changes all have tremendous potential for improving the American diet, but they also necessitate changes in our educational approach. These are some of them: (1) We must be aware of a far wider range of nutrients than the traditional eight or nine. The so-called "lesser" nutrients will not "take care of themselves" in a manufactured product as they do in natural foods. You will have noted that the 1968 Recommended Dietary Allowances include some of these, and we need to become well acquainted with them and find ways of teaching awareness of them to teenagers. (2) We must obviously teach in *nutrient* terms. Food groupings will not do. (3) We must be more intent than ever on insisting on proper labeling and then teaching teenagers to read and interpret them. I think you know that the matter of labeling is under advisement by the Food and Drug Administration. Such labeling will obviously require far more emphasis on food analysis than we are giving this activity now. (4) The consumer dare no longer be the only target for nutrition education. We must learn to communicate with food technologists, food manufacturers and processors, advertisers, and legislators in order to influence teenage nutrition.

A second major change is in our eating practices. Teenagers and adults eat more than three times a day. Many people, in fact, rarely eat meals. We found this to be true of one-third of our teenagers as long ago as 1961 (*15*). Yet many (no, not all) home economics foods courses are still geared primarily to preparation of breakfasts, lunches, and dinners. Obviously, a change to regular meals would necessitate a change in the entire way of life of many children and their families. Is this an essential and realistic goal for nutrition educators? Another change: more and more meals are being eaten away from home. I am pleased to see that many high school courses are recognizing this fact.

A third major change is in the teenagers themselves, and this is doubtless the most important change of all. Let us recognize that a large proportion of them—unfortunately not all—have far better science training at the grade school level than ever before. Let us not underestimate their ability to learn and understand technical nutrition. On the other hand, there is also a counter-culture reaching down from the colleges into our high schools which rejects the findings of science and emphasizes the use of "natural" foods, "organic" vegetables, and so on. My only answer on how to deal with this problem is that we must approach this culture just as we would any other that is foreign to us, that is, with sympathetic understanding.

There is much to be done—let us get with it!

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Questions Following Dr. Huenemann's Presentation

1. If better nourished children mature earlier and if early maturing children are shorter, are better nourished children going to be shorter adults?

Answer: Better nourished children are maturing earlier. Burke's studies indicate that higher protein intakes produced longer babies and therefore produced longer children.

2. In the literature there is some discussion of individuals born with large fat cells and of hypercellularity of fat cells in infancy or early childhood leading to adult obesity. How does this information relate to your findings?

Answer: The number of fat cells, as well as of all cells, is determined early in life. From this point on, one sees only an increase in the size of cells, but not in the number of cells. The hypothesis is that an obese-prone person tends to lay down a large number of fat cells early in life and tends to be obese later in life.

3. If eating patterns change during adolescence, why teach young children eating patterns?

Answer: We teach children at the right teachable age. There is no great hope of reforming the habits of a teenager. Teach them eating habits in terms of snacks. One should make sure that body stores are filled as children approach adolescence. Therefore, eating patterns should be taught to young children.

4. What nutrient terms would you teach teenagers?

Answer: I would teach nutrient concepts rather than as food concepts. The teenager should learn to analyze his own diet. He should learn about the nutrients most likely to be low in supply.

5. What is a meal?

Answer: This is an arbitrary definition. We defined a meal as any two items containing more than 100 calories eaten during certain hours of the day.

WHO IS RESPONSIBLE FOR DEVELOPING THE DIETARY HABITS OF YOUTH?—SYMPOSIUM

Home—Parent

MRS. JAMES B. JOY, *parent, Washington, D.C.*

When I was asked to speak at this Conference, I asked myself what as a layman could I say on this subject. I could not tell you anything new or spectacular, as I am sure you know and have heard the things that I am going to say.

As the mother of 13, I found out early in my career as a housewife that we had to teach our children from infancy good eating habits. If we wait until they are teenagers, we find ourselves facing mostly a very difficult task.

We as parents or guardians are responsible for setting a good example for these young people under our care. If we ourselves do not have good eating habits, we cannot expect too much from the youngsters.

It is our moral duty as parents to set the standards in our household for good eating habits:

1. We should have a set time for meals and follow this schedule as closely as possible.

2. We should serve nutritious as well as appetizing meals.

3. Make mealtime a pleasant time of day when we can share as a family the ***beautiful*** things that have happened to us during the day.

This, of course, would take place at the dinner hour and on weekends. Parents should not use this time to discuss family problems.

It is a known fact that the teenagers of today have more money to spend; therefore, they are able to join the hamburger and french fry set. We should not let this discourage us however and insist that they be present for meals.

There will be times when they cannot be present at a meal, due to other commitments, such as after school jobs. Their meals should be set aside for them to eat when they return home, thus, with the knowledge that a good meal will be awaiting them will discourage them from grabbing a soda and potato chips.

When problems do occur and we cannot cope with them, we should consult our family doctor to make sure there is no physical reason for not eating. I have found that my children will listen and follow what he says much quicker than they will me, as they feel that mother just wants to nag.

If we follow these ideas, our children will, in turn, be able to pass their knowledge on to their offspring, which, in turn, will make for a stronger, healthier America.

School

JOHN T. BROADDUS, JR., *principal, George C. Marshall High School, Fairfax County Public Schools, Falls Church, Va.*

Who is responsible for developing dietary habits of youth? (What influence do you think you and other administrators can have?)

Arnold Bennett has given to the world the "Modern baby's bill of rights" and I would like to quote portions. "The baby owes nothing at all to his parents, the parents owe everything to the baby. They are most solemnly bound to use every effort to keep him in good health and happy, to build up his constitution to fit him for the world, and to launch him upon the world." We are all fully aware that a child being born today, in the 20th century, has the greatest chance for optimum health and unbound opportunities that no other infant has had through the centuries. *Yet* there is still very little decline in death rates of infants; experts tell us that we still have children entering kindergarten and the Head Start classes who are suffering from some form of malnutrition. Those of us at the secondary level witness the poor eating habits of the teenage student everyday. The health nurse reports that students report to the clinic with headaches and stomachaches either because of little or no breakfast or crash dieting. We notice the obesity prevalent among the teenager. Have parents failed to comply with Bennett's bill of rights? We continue to read of the increase in deaths due to heart conditions and we observe daily the middle-aged individual who's figure reveals her lack of knowledge of nutrition or lack of practice.

There is complete nonacceptance of vegetables in school feeding by the teenager (with the exception of french fries, mashed potatoes), the custom of "breaking bread" as a family is becoming obsolete. Do you know that some children enter school who have never been seated for a family meal? We note a net decline in the family's food budget, we see more teenagers eating away from home, we note the increase in health food fad stores, *and at the same time food technology* is making rapid advances. Parents have failed, in this country of abundant food, to produce healthy strong children capable of coping with the complexities of this universe.

Only within the last 5 years has our Nation been awakened to the extent and to the effects of hunger or malnutrition among our children. The National Nutrition Survey (Dr. Schaefer and Dr. Johnson) report states "Zoo keepers, cattlemen, pet lovers wouldn't think of giving their charges feed that is deficient in essential nutrients. Man, it would seem, is much more discriminating in feeding his animals than in feeding himself and his loved ones." Parents have the responsibility for developing dietary habits for they have the child (in this country) from birth to 5 years. However, there is sufficient evidence today, at all economic levels, that parents either know very little about nutrition or make limited practice of their knowledge. Because children seem to eat what they want to, the contents of bag lunches brought to school reveal that. It then falls to the school to make the effort to improve the health of the child or to supplement families' efforts.

What are some ways we can assist youth in establishing desirable dietary habits?

1. The first assistance must come from those who are the experts in the field of nutrition—*make nutritional information more interesting; more dynamic*—students, like most adults, are *not motivated* by an interest in nutrition per se. They want the things that good nutrition can assist them in attaining. There are few reliable books written or available for youth that can turn nutrition on! Even though nutritionists frown on Adele Davis' writings, she has motivated and *captured the public interest*—why can't we get accurate, reliable literature for use in schools and for the public?

2. School personnel need training in nutrition if schools are to assist parents in establishing desirable dietary habits for students. There need to be changes in a State's educational requirements for its teachers. Where can a school principal or a teacher of teenagers find timely information and material on drug use and its nutrition implications to assist youth?

3. Assistance must come from team effort of all agencies. We learn that welfare departments have many young people as "clients" who have established a home outside of their family one—it is not a challenge for the welfare department to assist its youth as well as the other family members in understanding the "basic four" food groups and to make reasonable selections of foods?

For years secondary schools have been attempting to teach nutrition in home economics, health and physical education, and biology classes. However, I believe there must be more involvement of team teaching in working to introduce or incorporate nutrition in many subject fields within the curriculum. Schools use many adult volunteers to assist with activities. Why can't such organizations as the American Red Cross, American Home Economics, American Dietetic, American School Food Service who have experts in the *field* of nutrition or dietetics have members volunteer certain days each month to act as consultants to students and to faculty members or even to assist classroom teachers in nutrition? Schools and Government agencies need to join in presenting a mass education campaign of timely information—using TV, radio, supermarket displays, free seminars for parents on nutrition, expanding school feeding programs to have funds to assist classroom teachers with nutrition teaching, glamorizing the approach to good eating to compact the increase in health foods and weight cures and misinformation—this must be a cooperative endeavor.

4. Students must be involved in planning to have effective change in youth's dietary habits. We can *no* longer tell youth "to eat this because it is good for you"—this is a sophisticated population, one that is inquisitive and looks critically (and rightly so) at the instructor to see if he is an *example of his teachings*. Nutrition must be centered upon his needs. It is a known fact that many conferences are held dealing in what adults think are student problems—how few occasions are the students involved in the very basic planning! Public schools do need to assist parents in closing the nutritional gap in our society but it can be accomplished effectively when—

- new, inexpensive, accurate, dynamic material is available
- instructors have a background in the basic nutrition
- there is team effort of agencies
- there is involvement of students

Let's unite and stop discussing nutritional needs of students from *low* income families—why don't we begin by establishing desirable dietary practices for *all* children—the poor, the middle class, and the wealthy?

Let's turn nutrition on, not off!

Peer Group

LEANNE E. CUPP, *1970–71 vice president, North Atlantic Region, Future Homemakers of America, Suffern, N.Y.*

Before discussing the topic at hand, I would like to take a minute to explain the background for my involvement in this conference. I am now in my sixth and, unfortunately, my final year as a member of Future Homemakers of America (FHA). During 1970–71 I served as the national vice president, North Atlantic Region, of this youth organization. FHA is composed of over 550,000 boys and girls who are involved in the home economics programs in their high schools in the United States, Puerto Rico, and American schools overseas. Our activities focus on individual growth, preparation for family life, development of occupational skills and careers, and participation of youth in today's society. As we work toward the accomplishment of our goals, we learn cooperation, take responsibility, develop leadership, and give service. So you can see our commitment to the improvement of family life for all. It is out of our concern for proper preparation for family life, and as an FHA leader, that I am here to participate in this Conference.

During the school year I rise at 7 and leave the house at 7:40. In the intervening 40 minutes I wash, dress, make my bed, eat breakfast, put on my makeup, gather my books, and tell my mother my plans for the day. At 12:05 I sit down for lunch and a chat. By 12:30 I'm on my way to the next class. I arrive home anytime between 3 and 5 p.m., or later. Dinner is at 6 followed by homework, evening meetings, basketball games, or babysitting. I sleep between 8 and 9 hours each night and I'm healthy, but am I one of the six out of 10 girls whose diets could be improved? In preparing for this Conference I sought out first-hand information about the eating habits of the "average" teenager.

At the 1971 national meeting of the Future Homemakers of America in Kansas City, I distributed questionnaires dealing with eating habits of the girls attending the meeting.

Situation comedies on television have always joked about the bubblegum-and-coke days of the teenager. These questionnaires gave me the opportunity to evaluate the accuracy of these stereotypes. Admittedly, I was dealing with an exceptional group at the Future Homemakers of America national meeting. Of the 60 responses, none were from the male delegates to the meeting. The girls ranged from age 14 to 17, and most lived in rural areas. Although the bubblegun-and-coke image is overdone, I found that teenagers, supposedly educated in proper nutrition through home economics classes, had very strange eating habits. Breakfasts ranged from nothing through cookies and cake to orange juice, milk, bacon, eggs, and toast. Lunch could be anything from a full course meal to nothing, but the sandwich prevailed. I found dinner to be the last nutritional stronghold with few exceptions. Those who did not eat dinner or who ate skimpy dinners were those who worked evenings. After finding that over half the girls responding often skip breakfast and more than a third skip lunch I asked, "Do you think that programs of home economics classes or organized groups such as FHA have an effect on your eating habits?" Over two-thirds responded "yes." This discrepancy between their response and their admitted eating patterns reminded me of a story my home economics teacher told during our nutrition unit. She had served liver and spinach to her family the night before and immediately her husband knew that she was on the nutrition unit! For a week or so after a nutrition unit in class or a program in FHA or another group we all eat well but soon return to poor habits. Food is so abundant in the United States that it is hard to visualize the results of poor eating habits. We are constantly bombarded with food—television ads, fully stocked supermarkets, magazine layouts, and restaurants. If we sit down to two or three meals a day we are bound, we think, to get all the food we need.

The nutrition situation in the United States is bad. The teenager who spends a great deal of time away from home may be the hardest hit. He is on a small budget that allows only for greasy hamburgers and soda. Potato chips or a chocolate bar can be easily gulped between classes, and if you don't get up in time for a conventional breakfast, there's always instant breakfast.

The question now is what are we going to do about the situation? We can't slow the pace of living, for this is progress. We can't put all our nutritional needs into a pill because, according to dentists, mastication is essential for proper sleep. The muscles used for chewing are connected to sleep centers in the brain and must be sufficiently exercised each day to allow for a good night's sleep.

I don't think that an intensive nutrition unit of a month incorporated into a health course would be successful. This method has been used in drug education with, I believe, only limited success. If nutrition education is started in kindergarten and continued throughout the elementary years, the concepts of good nutrition will become well embedded. In the secondary schools these concepts could be put to practical use in home economics classes through meal planning units. Advanced home economics classes now offer such units but very few students continue home economics classes beyond ninth grade and therefore don't study nutrition in depth. I know of one group that carries out a program such as the one outlined above. The 4-H program seems to be very comprehensive and those who have participated in it feel that their eating habits have been positively affected by the individual projects they carry out. But the success of such a program cannot be measured until the products of the classes are raising children of their own.

Despite the fact that the girls felt that FHA and other groups had an effect on their eating habits, an overwhelming majority of them felt that their mother was the one who had the greatest effect simply because she prepares the meals.

Outside the family, though, there are great peer pressures to eat. If one person at the lunch table is eating ice cream almost everyone eats ice cream. After school, potato chips and chocolate bars are on sale in the locker room so everyone goes down there for a quick snack before they leave for the basketball game. Of course, there are some who bring apples or dried apricots, but that involves planning your after school activities before you leave the house in the morning. An article in the December 1961 issue of *Today's Health* states that today's teenagers get at least one quarter of their daily food in snacks. That's quite a large percentage, but when I went through my questionnaires and thought about my friends I realized that the estimate was not far out of line. There is gum and candy all morning, cookies and potato chips in the afternoon, a sandwich, cake, and soda when you get home and soda and pretzels with homework or television after dinner. Unfortunately, these snacks are full of "empty calories." If people could be satisfied with fresh fruit and vegetables rather than corn chips, cheese puffs and soda for snacks we would be better off. But, according to the slick and sexy boob tube, "in" teenagers don't eat apples and celery stalks. Natural foods are the latest fad and teenagers are listening to FM radio more than watching television so we may find that snack habits are changing, at least for the time being.

The world of today's teenager is quite different from that of his parents. We are feeling pressures today which our parents never dealt with. For boys there is, of course, the draft. College-bound students have to face Preliminary Scholastic Aptitude Tests, Scholastic Aptitude Tests, Achievement Tests, National Merit Scholarship Qualifying Tests, and various other exams depending upon their State and college. There are endless application forms for everything. High school courses are more involved than ever before, and there is a great push for independent study. Despite the movement to "do your own thing," there is tremendous peer pressure for conformity. A conformity of long hair, blue jeans, a clear complexion, and a lithe and slim body. There is the social pressure of Saturday night dating. All of the pressures have an effect on eating habits. The importance of getting into college today and the difficulty in doing so is enough to take your appetite away the night before a big exam, but your mother is there to make you eat. Your face is a mess and the dermatologist said no chocolate, no cheese, no homogenized milk but that chocolate milkshake looks *so* good. You want to wear your red velvet dress to the Valentine dance on Saturday night, but you've put on some weight since you bought it and the only solution is no food. You're babysitting and all is quiet. There is nothing on television but the refrigerator is full. Boredom, pressure, nerves—all roads lead to the refrigerator and malnutrition.

Now, after the milkshakes and babysitting we have a generation of overweight teenagers. It's too bad that the little box of willpower, as advertised on television, doesn't provide more willpower. About two-thirds of the girls who responded to my questionnaire had, at one time or another, dieted. Half of the dieters tried to lose weight by cutting back on their intake; another quarter followed the fad diets of the magazines. Most of the rest lost weight through the Weight Watchers' program. Only two dieted under the supervision of a doctor—one was on pills, the other used a doctor-prepared diet. What prompts these diets? Medical reasons, fashion, lack of friends or dates, or maybe everyone you eat lunch with is eating tangerine yogurt. The apex of American life is youth and beauty. If eating tangerine yogurt or nothing at all will get you there, it's worth a try—for about a week.

Giving up provides no solutions. Conferences such as this one will, hopefully, lead to an answer to the nutritional problems of a group which, as a block, may have the poorest nutrition habits in the United States. Despite my inexperience in the field of nutrition, I hope that my remarks have shed some light on the psychology of the teenager and his eating habits.

Media

DANIEL A. ALFIERI, *director of public affairs, Grocery Manufacturers of America, Washington, D.C.*

When we refer to media, we usually think about the different forms of mass communications—television, radio, magazines, and newspapers. The responsibility of the media is to communicate with intellectual honesty to diverse audiences. The communications function of the media stands apart from the function of advertising.

Shaping the dietary habits of youth is not in itself a primary communications function of the electronic or print media. However, as a part of our overall information and education complex, there is no reason why media cannot be utilized more effectively than it has in the area of nutrition and health.

The rationale for proceeding with information and educational programs was a cornerstone of the White House Conference on Food, Nutrition, and Health.

Nutrition and a concern for the nutritional adequacy of the American people will never again be the sole prerogative of nutritionists. Since the Conference, nutritionists have found the strongest of allies, including the media. But how do we pyramid our resources? How do we take advantage of what appears to be an upswing of interest in nutrition?

We have noted a concerted effort on the part of food manufacturers in the area of food enrichment and fortification. Many are building better nutrition into their products which are designed to meet contemporary needs that go along with our changing life styles.

We are a mobile society, and, rich or poor, more meals are eaten away from home. As a result, we are less able to exercise control over individual diets. Along with changing life styles, we find changing food habits.

If this is so, how successful have we been in building a contemporary nutrition information program? Are there new concepts to explore or is there a gap in our nutrition information resources? Despite some good evidence of progress, I believe herein lies a key as to whether or not the mass media can play a meaningful role in helping to form or change the dietary habits of youth, or for that matter the rest of us.

The information explosion one hears about is no myth. So much of everything competes for our attention. Yet, only a small percentage breaks through the barrier of receptivity.

If you scan the press, you'll find that the incredible, the extraordinary, and the uncommon command the attention.

If we have been, until now, unsuccessful in overcoming public apathy towards good nutrition it might be time to look at the message. Can it compete for attention? I believe we can do an uncommonly better job.

I am pleased to learn that the U.S. Department of Agriculture is developing a nutrition information center. This is important in developing the resources that are needed if we are to use the mass media successfully.

For sometime now, the Grocery Manufacturers of America, in cooperation with USDA and HEW, have been involved in the forming of a national nutrition information campaign through the Advertising Council. Industry and Government have teamed together in an effort to create the "uncommonly good" messages to compete in the same fashion as those which sell goods and services. It is not simple and it has been a long road.

It has become obvious that an advertising campaign cannot be a course in nutrition. However, we hope that the advertising will generate interest and motivate people in the direction of good nutrition. Followup material, such as informative booklets, will need to be used to do the educating. This supplemental material is now being developed.

The campaign, which also has the support of the National Academy of Sciences, will use all media—television, radio, and print. We had anticipated that the campaign would be in progress now. But we have discovered that it takes a lot longer to break new ground and develop that uncommonly good message.

The Advertising Council campaign will be directed toward three priority groups: Preschool-age children; teenage girls; and women of child-bearing age.

I should point out that research has been built into our campaign to determine if there have been attitudinal changes as a result of this program.

Despite the fact that the campaign will utilize all media, and as a public service our initial investment will be valued at $6 to $8 million of donated advertising, we are only scratching at the surface. If we hope to change or remold dietary habits, this effort will need to be multiplied many times. GMA is proud to have been a catalyst in starting such an effort. We hope that others will take up where we leave off. The cooperative efforts of industry and Government together can go a long way.

I would like to report briefly on our newest and latest joint effort with the U.S. Department of Agriculture in an attempt to use media in an innovative way.

Within the last week this attractive comic book, "Food Facts and Fun, with Butter and Boop," came off the press. One million copies are now being distributed through the Extension Service.

The aim of the comic book is to reach children in the inner city with simple messages about nutrition. GMA called on the services of a young black group in Kansas City, known as "Black Light." They are experienced communicators with the black community, and the book is well-flavored with the jargon of the inner city. The scenes and the activities, together with the jargon, relate well with the children.

I will say, that in order to make it uncommonly good, we had to resist many efforts to change the language back to the King's English. If we hadn't stuck to our guns, we would have had a rather common product.

We expect that many millions more copies will be reprinted and anyone who wishes to do so will be granted the rights without cost.

I neglected to mention that we field tested the concept with consumer aides connected with Extension Service at Rutgers. They considered it a good teaching aid. It was also tested with 200 Kansas City school children in grades 5 to 7. They got the message.

To sum up, if we are anxious to call upon mass media to assist in developing dietary habits of the young, or anyone else, you and I have the primary responsibility for developing the kinds and types of nutritional resource materials that are uncommonly good. They must stand on their merits if they are to be used.

Nutrition, I am told, is not a precise science. Our wisdom is not etched on tablets of gold. So I recommend to you that we explore new, better, and exciting ways to communicate it.

Industry

JAMES P. MCFARLAND, *chairman of the board, General Mills, Inc., Minneapolis, Minn.*

I'm delighted to participate in a symposium with such a distinguished panel. I also consider it a privilege to represent industry in these discussions, but I must disclaim any mandate to speak for industry as a whole.

Philosophically, I can speak only for General Mills, the company with which I am associated. I am sure, however, that most, probably all, industry would share General Mills' view that a business organization exists to serve. Whether it prospers will depend almost entirely on the quality of the service it renders. As the late James F. Bell, founder of General Mills, used to say, "A company must serve well to deserve well."

In the food business, this means, first and foremost, producing good food that people wish to eat. No food, whatever its other qualities, has value if it isn't consumed.

Still, it seems obvious to me that service cannot end there. It is essential to the continuing success of any company—as well as a requirement of social responsibility—that its products contribute to the well-being of consumers. Those products can contribute with maximum effect only when the consumer uses them properly—and that means with adequate knowledge.

Does the food industry, then, have responsibility for developing the dietary habits of youth? My answer is an emphatic yes.

General Mills has a statement of nutrition policy that puts this belief in official form. I should like to read portions of it to you with the thought that they are probably typical of food industry attitudes.

The statement starts with this preamble:

> "General Mills divisions and subsidiaries manufacture and distribute a wide variety of food products. These products are consumed in turn by a wide variety of people to alleviate hunger, to fill nutritional needs and/or simply because they taste good. We feel a social obligation to provide foods which meet these needs, and to do so as effectively as possible. We think that as part of this process, we must continually monitor changing food consumption patterns in the United States and do what we can to fill nutritional needs as they become evident. *And further, we believe that we have a continuing obligation to provide sound nutritional information as part of the process of efficient manufacture and distribution of good foods.*"

After four items dealing with product composition, production, and general quality, the policy makes a statement that relates directly to our subject this morning. "We will convey nutritional information about our products accurately and in good taste, and will work toward bettering nutrition education overall."

We take our policy statements very seriously. I hope this one shows that we recognize our responsibility and that our intentions are sound.

You know, however, what everyone says about unfulfilled intentions. How do we go about fulfilling ours?

One of the closest links between the food processor and the consumer, young or old, is the product label. Nutritional information on packages, in clear, meaningful, understandable form, can cumulatively reach a large segment of the adult and youth population of the country. More important, it can do so repeatedly at the points of purchase and use, where nutritional information should be most valuable. Over the past 8 years, we have devoted the back or side panels of more than 300,000,000 breakfast cereal packages to nutrition.

Generally, however, there is considerable room for improvement in providing on package labels information about the nutritional value of products. The problem centers on just what improvements should be made since too much information, or information presented in the wrong way, might well be more confusing than communicative. Right now, joint Government-industry studies are under way to answer such questions as these:

(1) How should nutritional information be communicated?

(2) What nutritional information on labels will be used by consumers?

(3) Should all nutrients be listed on the package?

(4) Should the quantity of a nutrient be communicated numerically, verbally, or pictorially?

In the near future, these and other pertinent questions hopefully will be answered to at least a considerable degree. Meanwhile, members of the food industry are steadily improving their labeling as understanding of nutrition advances.

Educational programs, through a variety of channels, offer another major way in which industry may fulfill its responsibility for improving the dietary habits of Americans, particularly young Americans. In approaching such programs and judging their potential effectiveness, I believe it's necessary to recognize that no one specific diet is perfect for all. People have different habits, different incomes, different environment, different schedules at work and play. They are of different sexes and sizes and hence have differing nutritional needs. We can't in industry, Government, or other programs give a universal formula for eating one's way to good health.

At present, the simplest, most effective approach seems to be to emphasize variety in diet. Originally, nutritionists devised the basic seven food groups as a convenient guide to this variety. Later, the U.S. Department of Agriculture reduced the basic seven to the basic four in the interest of simplicity. Today, the basic four, while not a precise guide, appear to offer the most practical tool for emphasizing variety in eating.

Through the years, the informational mills of the food industry have been grinding steadily. An array of materials, in volume perhaps startling to many people and largely centering on the basic four, has flowed from trade associations and other industry groups. You may be interested in a few examples.

Members of the Cereal Institute, under a specially planned program, have in the past year sent into American homes more than 400 million packages with carefully conceived and attractively presented messages on nutrition. These cereal packages have a unique quality; they frequently remain on the breakfast table, providing reading material for the younger set as father reads the morning newspaper. Meanwhile, the institute itself maintains a continuous flow of filmstrips, leaflets, and teaching guides to nutritionists and educators throughout the country.

The Dairy Council has been in the vanguard as a supplier of educational aids and demonstrations for school systems, color films on nutrition for use by a wide variety of groups, even setting up nutritional experiments in schools.

The National Livestock and Meat Board and the United Fresh Fruit and Vegetable Association produce and distribute slide films, motion pictures, and literature for schools, institutions, and individuals.

As you will notice, I have just listed industry representatives of the basic four food groups —cereals, dairy products, meats, and fruits and vegetables. Each is promoting its own products in the American tradition, but in the context of a balanced diet. That, perhaps, is one of the most effective ways in which industry can contribute to the education of people of all ages.

As most of you are probably aware, the White House Conference on Food, Nutrition, and Health recommended reestablishment of the Food Council of America to disseminate nutrition information. In the year since, the council, supported by major food manufacturers, retailers, and trade associations, has spread the gospel of the basic four food groups through literally hundreds of thousands of displays, posters, comic books, recipes, articles, pictures, advertising, point of purchase materials, and labels. Meanwhile, the Advertising Council, again supported by leading advertisers of the Nation, is planning a long-term informational-educational program through advertising media to create positive attitudes toward nutrition and the critical role it plays in all of our lives. Major production costs of the campaign will be borne by the Grocery Manufacturers of America with the balance shared by several Federal agencies, including the U.S. Department of Agriculture.

The Nutrition Foundation, supported completely by industry, has taken a somewhat different approach. Concluding that the medical and dental professions offer one of the best channels for nutrition education, they are sponsoring workshops, seminars, and courses for doctors, dentists, and similar professional people. This approach is based on the idea that medical and dental students do not receive as much course work related to nutrition as many people might think. Yet, when they give nutritional advice to a family, their words are more likely to be heeded than those from any other source. Hopefully, every bit of effort expanded with the health professions will be multiplied many times.

Going beyond trade association and other group efforts, individual companies have poured forth a growing flood of materials for nutrition education. Here are just a few examples that I reported to members of the White House Conference a short time ago. Companies are underwriting nutrition programs of 4-H Club work; developing comic books to tell the nutrition story in the idiom of inner city youth; producing experimental nutrition education television messages aimed at low-income families; producing a 28-minute film on nutrition and health; providing massive in-store displays devoted to nutrition.

General Mills, the company with which I am, of course, most familiar, has been active in nutrition education for more than 40 years. Betty Crocker made her radio debut in the 1920's, offering meal planning and cooking ideas to listeners for over 20 years. From 1944 until the mid-1950's, we maintained an intensive nutrition education campaign directed to grade school children, reaching an estimated 25 million. Some materials from that campaign are still made available to educators on request.

From our Betty Crocker Kitchens flow materials on cooking, baking, and meal planning, including information related to nutrition. Since 1960, more than 3.6 million filmstrips and 4.5 million booklets have been distributed, and visitors to the Betty Crocker Kitchens now receive a booklet, "Nutrition and Your Family," emphasizing the basic four food groups and listing the nutritional composition of many General Mills products.

Currently, we are completing a new filmstrip named "Mealtime Planning," with strong emphasis on the basic four and their use in selecting menus; it is a new version of another filmstrip that has been seen by four million young people. Also in preparation is a Betty Crocker paperback book entitled, "How To Feed Your Family For Health and Happiness . . . No Matter What." Written in a breezy style, it will offer help to mothers in meeting the nutritional needs of their husbands, children, and young people of all ages.

Since 1963, General Mills has served the health professions by providing nutrition data about our products as well as general education on applied nutrition and dietetics. More than a million pieces of literature on these subjects have been distributed to consumers by doctors and dietitians.

When appropriate, we have tried to give information on nutrition in general and spotlight the importance of good breakfast habits in particular through our packages and advertising. The value of a *complete breakfast,* including juice, cereal with milk, buttered toast, and milk as a beverage, has been recurrent in our television commercials for cereals. And as I mentioned a moment ago, some 300 million of our cereal packages have carried nutrition information into the Nation's homes in the past 8 years.

We all recognize, I'm sure, that motivation is equally as important as nutrition education and offers a problem that is even more difficult to solve. As I pointed out to a congressional study group last winter, some people obviously are malnourished because they can't afford to buy the necessary food; this is an economic problem. Some people are malnourished even though they have the money; they don't know what to buy. This is an educational problem. But many people are malnourished even though they have the money and know what to buy; they just don't care about good nutrition. This is a motivational problem. Attacking it may well call for dramatic new approaches in the years ahead.

The limited success from the massive efforts that have been described at this symposium in itself attests to the need for new, creative thinking. In addition, the appearance of new foods to met the demands of fast-paced modern living and the general increase in the use of processed foods has cast a cloud over traditional methods of nutrition education.

I don't have any magic answers for motivating people to eat wisely. I am confident, however, that most men and women, as well as boys and girls, will always be determined to *enjoy* food as well as to be nourished by it. It's well to keep in mind, then, that there is a place for those "fun foods" that provide pleasure and calories but little else of nutritional value. A wisely chosen diet with adequate amounts of the basic four, for example, may provide as little as 1,400 calories. Yet the average teenager will need somewhere between 2,400 calories for a young woman and 3,000 for an active young man. Obviously, this provides latitude for more of the basic four and foods that are eaten for pure pleasure. It seems to me we'll get further in motivating and educating people in the cause of good nutrition if we let them know that such options exist. This is particularly true when dealing with the young.

Perhaps the experience of Dr. Ivy Celender, director of General Mills' Nutritional Service Department, offers a clue to motivating young people. While conducting nutrition lectures at a meeting of a National Youthpower Congress, another organization sponsored by industry, Dr. Celender found that the fastest way to turn off her young listeners was to talk nutrition in the traditional sense. Concentrating on the foods they like, as they like to eat them, and adding a touch of adventure, seemed the one way to spark their interest. Why not, she asked, offer way-out menus like this:

> For breakfast—hamburger on a bun, chocolate milk, an orange (perhaps on the run).
>
> For lunch—tacos made with hamburger, lettuce, tomato and cheese, a banana milk shake, and an apple.
>
> For dinner—a cheese pizza, carrot sticks, butterscotch pudding, and cola—plus a ready-to-eat cereal with milk as a later snack.

Wild? Yes, but sound—offering more than the recommended four servings of fruits and vegetables, four of milk, two of meat, and four of cereal products.

Such a menu might turn some of us away from the table in dismay. For others—and I suspect a good many young people—it, nevertheless, might sound pretty interesting. At any rate, adventures in food may be needed both to educate and motivate the Nation's youth in nutrition. Certainly, adventuresome thinking is needed to improve the nutritional knowledge of this Nation. I'm confident industry will continue to effectively meet its challenge.

WHO IS RESPONSIBLE FOR DEVELOPING THE DIETARY HABITS OF YOUTH?—YOUTH PANEL DISCUSSION

Moderator:

Miss Mildred Reel
National Adviser
Future Homemakers of America

Youth Reactors:

Angela -------- I am a high school junior from Washington, D.C. I was interested in coming to the Conference because I had put myself on a crash diet and lost weight.

Donita -------- I am 17 years old, a senior in high school in the District of Columbia and have worked for the U.S. Department of Agriculture as a summer employee.

Clifford ------- I am from Georgia and attend the University of Georgia. I represent the 4-H, of which I am a member, as well as the college aspect. I was a participant on the Georgia Nutrition Conference.

Richard ------- I attend McKinley Senior High School in Washington, D.C., as a senior. I was selected to come to the Conference because I am interested in medicine and I want to be a doctor. I work part time.

Joel ----------- I go to high school in Washington, D.C. I am a vegetarian.

Miss Reel: DO YOU AS STUDENTS BENEFIT FROM MEALS SERVED IN THE SCHOOL LUNCH?

Angela: I personally ignore vegetables served at school as they are not appetizing and are overcooked. I generally eat at Mac . . . rather than school. I eat vegetables at home and enjoy my mother's cooking.

Clifford: I am not going to eat where the food is not tasty. School lunch workers must serve young people the foods they like.

Donita: Better foods, especially vegetables, are needed in the school lunch.

Richard: When I see cake sitting next to the lunch, I am going to pick the cake.

Clifford: The school lunch is always better when there are official visitors.

Miss Reel: HOW DO YOU FEEL ABOUT THE MATERIAL PRESENTED BY THE MEMBERS OF THE SYMPOSIUM?

Angela: I want to add to Mr. Broaddus' statement about establishing desirable dietary practices for all children, not just low income. We need broader education for all children and we need to provide food in low-income areas. Many problems are present in low-income areas because people must eat what is available.

Joel: We need to be more conscious of inner-city youth.

Angela: I work after school and eat too much. I eat no breakfast, pick at lunch, and overeat at a delicatessen after school. At night my mother makes me eat supper.

Richard: In the morning I cannot find time to eat breakfast. I didn't eat breakfast this morning but I had my one-a-day. I've lots to do in the morning—like ironing my clothes, and combing and spraying my hair.

Clifford: One speaker said that we eat too many snacks. As a college student, the only way I can get through the day is to eat snacks because there is no time for meals. I have six snacks a day, not cake and candy but food such as sandwiches. I do leave out green vegetables in my snacks.

Joel: What is made available to us for snacks? Mostly sweets. Snacks could be one of the best shortcuts to good nutrition in the United States.

Angela: I want to talk to dieters. This is a weight-conscious society. I was fat because my grandmother, who prepared our food, "fed us to death." I lost 50 pounds in 6 months on a crash diet. This caused my mother to become upset. This was not a good diet, as I was weak, tired, and could not think at school. But I am glad to have lost weight, as I went from a dress size 18 to size 5.

Miss Reel: DO YOU THINK THAT NUTRITION INFORMATION COMMUNICATED BY THE MEDIA CAN INFLUENCE TEENAGE DIETARY HABITS?

Donita: More nutrition education should be done through television. I drink milk because I want to be a queen, like the girl in the TV commercial.

Richard: TV influences me. I watch TV most of the time I'm home. I watch commercials. I know how the body uses vitamins and minerals. If you drink milk, you get a substantial amount of protein and you feel better.

Angela: I hate milk and TV spots about how good milk is have not influenced me to want to drink milk.

Joel: I question Leanne's (Leanne Cupp) statement that the in-group do not eat carrot sticks. Nutritional food is favorably looked on by my in-group. We buy cheese, not candy.

Clifford: I am not affected to a great extent by the media. I haven't watched TV much since I started college. TV needs to reach younger children. Even though they know what's good they don't apply what they know. I question the lack of availability of food. I live in a trailer and cook supper (well balanced). The rest of my meals are eaten in a restaurant. I like vegetables if they are prepared right.

Miss Reel: WILL YOU COMMENT ABOUT PERSONS BEING VEGETARIANS?

Joel: I am a vegetarian because I don't like the idea of slaughtering animals for food.

Angela: You would never find a vegetarian in the black community. Meat is the main asset in the black community. Nutrition isn't the thing. People are only concerned with not being hungry. I think to promote nutrition it might help to put nutritional messages on napkins at school, such as "Did you drink your milk today?" Comic books with nutritional messages are a good idea, but many can't read.

Miss Reel: WHAT DO YOU CONSIDER THE MOST IMPORTANT THING IN NUTRITION?

Clifford: The basic thing I found in the last 2 years working in 4-H programs with the inner-city is one neighbor talking to another neighbor. We have to work more with the education of young people.

Donita: I think that you need more parents involved and need more open conferences with youth involved, then you'll accomplish much more.

Richard: My mother is from the South. If you're not at the dinner table when the meal is served, you don't get anything to eat. She cooks real well. I seriously think more care should be given to food preparation. Schools should really get together and try and realize someone's going to eat it.

Angela: With the cooperation of parents, children, media, and education in the school, we could probably lick this nutrition thing.

Joel: It is up to industry to market products, up to media to inform us about the products, and up to the schools to educate us.

Miss Reel: THEN WE SEEM TO AGREE THAT WE SHOULD INVOLVE YOUTH AND PARENTS IN PROGRAM PLANNING.

NUTRITION EDUCATION—PROGRAMS, ACTIONS, TECHNIQUES

Government

NUTRITION EDUCATION THROUGH SCHOOL FOOD SERVICE

Francis W. Dobbins, *nutrition coordinator, School Lunch Division, Oklahoma State Department of Education, Oklahoma City, Okla.*

The waving fields of golden wheat, ready for harvest on Oklahoma's sun drenched plains is no accidental happening. Such a phenomenon is the result of careful planning, diligent work, and the direct involvement of people. The relationship of a bountiful harvest and a successful education program for the total child draws a fine parallel as expressed in the words of Mr. Marvin Stokes, Superintendent of Byng consolidated schools in the south-central part of Oklahoma. In this school system we see one of the finest overall child nutrition programs in existence. As Mr. Stokes so aptly expressed his philosophy, and I quote, "You know, along with education, I'm sort of a weekend farmer. If, as I begin my work on a Saturday morning, I suddenly discover that the motor in my tractor has a terrible knock, I don't attempt to do my day's work without first repairing my tractor and getting it into condition. The same is true at school. I'm an educator—not a foods expert, but if I must feed children in order to educate them—then feed them I shall." On any school day morning you choose to visit, you would see many buses driving to the front door of the cafeteria to allow their young passengers to go directly to the dining room. Teachers and students alike find this the "in" thing to do first, before a busy day at school. You ask how can this superintendent *require* his teachers to supervise such a program as this? They are not required! They are able to see what benefits boys and girls derive from proper food at the beginning of the day, and their business is building the lives of upcoming generations of leaders. Call it dedication or simply concern for humanity, these same teachers have witnessed virtual elimination of midmorning sleepiness, stomachache, headache, and general apathy.

On occasion, when I spoke to the counselor about this program, he excitedly showed me a group of test scores comparing performance before involvement with a total school nutrition program and those of the present time. The program in this school involves breakfast, lunch, milk, and classroom education in nutrition. Mr. Stokes commented that if he were forced to make a choice between breakfast or lunch at school, breakfast would remain. "You see," he said, and I quote, "the prime time for learning is during the morning hours. If a child has not had the proper kind and amount of food prior to his educational experiences, a considerable amount of teaching is wasted." It was very interesting to note that academically some students' grades actually increased a full point during the first semester of the implementation of the school nutrition program. I am sure that it would be quite difficult to ascertain whether students actually learned this much more, or if the teacher-student rapport improved to the extent that the overall performance was so much more satisfactory. Beyond any doubt, however, good nutrition is the foundation for a healthy body and an alert mind. Both the body and mind must function in harmony for the academic program to achieve its maximum potential—thus proper nutrition is the foundation for learning.

To make a nutrition program effective the educators must be involved! As a matter of fact, the most successful educational programs are those in which the classroom teachers have taught their pupils about foods and nutrition with specialists to provide the necessary reinforcement and guidance. "Yet, how can this be done?" we asked ourselves in Oklahoma. A survey of the educational training of a selected group of elementary teachers revealed that only 12 percent of this number had received any training whatsoever in foods or nutrition science. Certainly teachers must have a basic knowledge of nutrition before they can relate to others. Just how could this be accomplished? Mr. N. W. Baldwin, Superintendent of Broken Arrow Schools, had an answer for us. He said, and I quote, "We must provide teachers with a basic understanding of the needs for a sound nutrition program not only for themselves but for their students as well. This understanding must be augmented by a working knowledge of educational procedures in nutrition in order that these teachers will be able to translate knowledge into action."

Broken Arrow Schools accomplished this teacher education through in-service training programs, jointly coordinated by the Food Service Director and the Vocational Home Economics teachers. Future Homemakers, who were advanced students in high school homemaking classes, worked extensively in the elementary schools. As you might well imagine, rewards were twofold since each Future Homemaker participating perhaps learned more than she would in regular classwork. Preparing presentations for the elementary students proved most inspiring. So much interest was generated through the efforts of the students, that parents were attracted to the project. Special classes were then organized for parents.

Was the program successful? Indeed. In one Broken Arrow elementary school where a definite problem existed, joint efforts increased participation in the school feeding program a little over 25 percent and decreased plate waste almost 50 percent in one semester! The results were very positive and promising. Classes in nutrition education are now conducted on a continuing basis and all elementary teachers are strongly urged by the administration and the Board of Education to make this a part of their in-service education program. The coordinators developed an exciting program, designed to inspire rather than reform classroom teachers. It has been well received. At the present time, the Broken Arrow School system is working to fit nutrition education into its entire elementary curriculum. By this study, the school is convinced there is a direct relationship between teacher-parent nutrition training and cafeteria participation. Naturally, there have been setbacks, struggles, and heartaches, but it appears the hour of triumph is now at their educational doorway.

This situation is unique, perhaps, but not unusual. There are others who stand boldly and accept the educational challenges of our complicated and complex society. No longer can we afford to be apathetic in any phase of education. Most especially that of the development of sound food habits. This must be a time of action, for the name of the game in American education today is accountability. No longer can any educator be indifferent to disciplines other than his own. We must be accountable for the "whole child" and aware that in accountability one measures not only what is poured into the educational process, but what comes out of it. This very philosophy provides one of the greatest challenges that the school food service program has been given since its inception—25 years ago. The world of the seventies will look inquiringly at its students and ask, "What are you able to do? How well can you perform in a given situation?" Yes, someone is accountable—be it good or bad. You and I know that it is virtually impossible to teach a hungry, malnourished child. Health and physical development must be considered as the basis for any successful academic program. Sound bodies promote sound minds and neither can be built without essential nutrients. The food a child eats provides the nutrients for the materials used in this construction. "Those of us in school food services are the very foundation for the educational system," was a statement made by Mrs. Juanita Adams, Food Service Director of the Muskogee, Okla., schools to her superintendent, Dr. Jon Tom Staton, as she explained that all teachers needed to have a basic course in nutrition education. Being once a classroom teacher, Mrs. Adams had carefully outlined results of some research projects which provided evidence that nutrition does most certainly influence intellectual performance and learning. She stressed that the acceptance of nutritious foods and the practice of good eating habits must be learned just as any other skill. Dr. Staton concurred in her analysis, emphasizing that any project or learning experience that was so vital to the welfare of all students must not be left to chance or circumstance. Yes, their school did need a Nutrition Education program for teachers. The superintendent pointed out that this program should include practical experiences that could be carried into the classroom. Forty-five teachers enrolled—only one teacher missed even a single session. Evaluations are now in progress and a second class is scheduled to begin in the immediate future.

Of course, the school nutrition program must be all inclusive from the youngest student to the oldest, and to gain the participation of the young adult is a monumental task. Claude Wheeler of Del Crest Junior High School, Midwest City, believes that good food habits learned early are not readily forgotten—and to learn to accept good, nutritious foods, boys and girls must be consistently exposed to these foods served in an attractive manner. He believes in his endeavor so strongly that he has 100 percent participation—a limited amount of plate waste—with an open campus situation. When students enroll, they are expected to make eating in the school cafeteria a part of their school day.

As students go further into more advanced development, how do you continue to reach them? Dr. Larry Burdick, superintendent of Pryor Schools, feels that teenagers need to share in the actual development of the school food service program if it is to be accepted—much less function as a laboratory for learning. How can this be accomplished? Dr. Burdick initiated the action by meeting with the Food Service Supervisor and a joint assembly of the student council. Outside resources were requested to present the nutrition story of the school feeding program in as informative and as interesting a manner as possible—to really explain its place in the full, happy life of all school persons. The approach was a positive and challenging one—the students were receptive. The council president appointed a committee to work with the key people in the development of a new program. Atmosphere, student appeals, and food likes and dislikes, all became a part of the weekly rap sessions. Indeed, there was much conversation, but, it was closely followed by action. The menus planned would delight any youthful gourmet and at the same time careful cost figures kept them within the established budget.

As visits were made to these various schools on many occasions, I was aware just how interested and involved the school people were, and yet I could not but wonder just where do we find ourselves when the fires of enthusiasm begin to dim. M. A. Diel, superintendent of schools in Clinton, provided some advice to make certain that programs once developed remain stable and progressive. I would like to share his thinking with you: "The food service program is the largest living laboratory any school has in which to teach and practice good sound food habits. It is a readymade situation where young people have a chance to enjoy well-prepared, nutritious meals served in attractive surroundings." Mr. Diel pointed out to me that the social experiences of adult eating should be more effectively related to the young adults who are yet in secondary schools. In order to do this, the Clinton School administration and the student council have devised a plan whereby every student club will have a luncheon meeting scheduled at the regularly designated time each week. This group will have a private dining room, complete with table cloths and all the trimmings. Each club will conduct business as usual, but on specific occasions additional instruction in some related areas such as parliamentary procedures, public speaking, and social graces will be programmed. They would like to plan this class in the social studies category and would perhaps call it "Education for Living." Of course, an additional instructor would be required to assist the various club sponsors. Mr. Diel explained, "We must all look closely at our curriculum and make every possible effort to make it more relevant to present day student needs. This expanded use of the school food service program provides utilization of a teaching tool that is lying dormant in most schools; a local resource, rarely tapped, that could add much meaning and depth to many areas of our curriculum. The possibilities are limited only by the imagination of the instructor."

What is the key to a successful school nutrition program? I asked E. H. McDonald, Deputy State Superintendent of Public Instruction. His reply was stated simply, "The school administrator." He continued, "The key person to any on-going educational program is the administrator. Sell your 'idea' to him as an essential component of a sound educational endeavor and you've laid the 'cornerstone' for a program with far-reaching influence."

Dr. Leslie Fisher, State Superintendent of Public Instruction, provides the key to Oklahoma's program when he says, "Good health and good nutrition cannot be separated. If we, as educators, are sincerely dedicated and committed to the education of the whole child—physically, mentally, and emotionally—nutrition education must centainly play a vital role."

To make any such program effective, teamwork is required. Ours is a joint endeavor of the Regional Office, Food and Nutrition Service, United States Department of Agriculture, the State Department of Education, and the local school systems. The challenge, a better future for tomorrow's youth.

NUTRITION EDUCATION THROUGH A HEALTH PROGRAM

ANN M. ROWLAND, R.D., *former chief nutritionist, Children and Youth Project, Department of Pediatrics, University of Alabama Medical Center, Birmingham, Ala.*

Regardless of where we work—in the field of health, education, nutrition, with food trade associations, community service organizations, professional groups, or Government agencies—we come in contact with teenagers who present various nutritional problems. It is imperative that we work cooperatively in delivering nutritional educational services not only to these youths, but to the family unit as a whole.

One of the concerns of the 1970 White House Conference on Children was the lack of national child health programs assuring comprehensive health care to all children. Children and youth projects are the first attempt to provide comprehensive health care to children and youth. Today, I want to talk with you about children and youth projects and specifically about the children and youth project located in Jefferson County, Ala., with respect to:

- legislation concerning the evolvement of Children and Youth Projects
- primary objectives of C&Y projects
- pertinent factors regarding the C&Y project in Jefferson County, Alabama
- the role of nutrition in our program
- major nutritional aberrations we have identified in the adolescent population of the project
- some of the nutritional activities in which we are involved
- finally, some comments as to the effectiveness of our program in influencing food habits of youths.

Children and youth projects came into being in 1965 with the passing of Public Law 89–97. Public Law 89–97 will be remembered by most people as the Medicare Law. Part four of Title V of this law authorized a 5-year grant of special project grants to provide comprehensive health care and services to preschool and school age children. The Maternal and Child Health Service, Health Services and Mental Health Administration, Department of Health, Education, and Welfare is the awarding agency of the C&Y grants.

These grants are made available to medical centers, teaching hospitals, and health departments. The Birmingham project is affiliated with the University of Alabama Medical Center.

The legislative language that sets forth the objectives for Children and Youth Projects made it quite clear that the projects were to increase the availability of existing services, not to replace them. The overall objectives of the 67 C&Y projects are essentially the same;

that is, to explore new methods of delivering health care and at the same time provide comprehensive health services to preschool and school age children in areas with a concentration of low-income families.

The methods of delivering health care are unique to each project since services are tailored to and planned in cooperation with the community being served. Thus, new and better ways of delivering health care to children of the poor are being developed.

Projects differ with respect to personnel, geographic area, eligibility, problems, and priorities. The core team of the Birmingham project includes health specialists in the functional areas of medicine, dentistry, social service, nutrition, and psychology. The two nutritionists on the project staff work closely with the clinic nutritionist employed by The Children's Hospital. Criteria to receive the services of the Jefferson County project are:

- patients must reside in Jefferson County, Ala.
- patients must range in age from birth through 18 years
- patients must be medically indigent although all children are eligible for screening examinations.

Presently, there are 38,000 children registered with the Jefferson County project. The services provided by the project include: casefinding, diagnosis, prevention and treatment, correction of defects, and after care, both medical and dental.

The role of nutritionists in the Jefferson County project is to coordinate and to provide for continuity of nutrition health services. The nutritionist identifies nutritional needs of the project population: she assists in establishing realistic nutrition goals for individual registrants and their families; she participates in the development of evaluation of the dietary aspects of the total care plan; and she provides the families with information concerning food and nutrition, food products, food purchasing, and food preparation.

Various nutritional aberrations have been identified in our project population since the beginning of the project in October 1966. Weight problems and dental caries are the major nutritional problems presented in the adolescent population. Other medical problems that have nutritional implications are duodenal ulcers, hypertension, rheumatic heart disease, congestive heart failure, and diabetes mellitus. A 1968 survey of project adolescent registrants clearly indicated a lack of milk, vegetables, and fruits in the dietary intake of the adolescents. Bread, cereals, concentrated sweets, and fats were consumed in excess.

Project patients, generally speaking, are from low-income families with limited education. Hence, there is a great need for education and guidance in food selection and in establishing good food habits.

In discussing some of the activities in which we are involved, it is important to consider the teaching-learning process. What is teaching? Teaching is not telling—Webster's definition of teaching is the cause to know a subject. Galileo said, "You cannot teach a man anything; you can only help him find it within himself." Among the approaches used by the nutritionist in our adolescent clinic are:

- giving the adolescent credit for knowing something
- giving him a chance to talk and ask questions
- displaying a sincere interest in him as an individual
- being honest with him
- respecting his point of view
- trusting him
- being flexible
- providing knowledge on his level
- learning to listen
- actively engaging the teenager in the solution of his own problem.

What chance does the adolescent of today have in following the guidelines for good nutrition? This question has been asked. The positive responses to this question are:

- teenagers get hungry
- teenagers like to eat
- teenagers want energy, vigor, and the
- means to compete and excel in whatever they do
- good habits can be acquired during childhood.

We, as educators, should constantly be aware of these assets and the opportunities they present for effective nutrition education.

Activities in which the nutrition discipline has been effectively involved are:

(1) Nutritional conferences held with medical students, interns, and residents, and student nurses; and nutrition conferences provide opportunities for the nutrition staff to discuss and clarify nutritional concepts. During hospital rounds, staff members have the occasion to discuss particular patients, their problems, and to suggest follow-up care. These are mechanisms that help medical students, interns, residents, and physicians to recognize and provide for nutritional needs—ultimately contributing to comprehensive health care.

(2) The nutrition discipline routinely provides direct patient nutritional counseling to adolescent in-patients and in the adolescent out-patient clinic as well as some of the speciality clinics—among which are Cystic Fibrosis and Diabetic. During the patient's initial visit with the nutritionist, a nutritional assessment is made. The nutritionist then has the responsibility for seeing that a nutritional care plan is initiated, developed, and carried out. Elements of the care plan include a brief statement of the needs or problems and the plan of intervention; that is: what is to be done; by whom; at what intervals with what expected outcome within a specified period of time.

(3) The nutrition staff of the project cooperates with nutritionists in the Bureau of Nutrition, Jefferson County Health Department, the Maternal and Infant Care Project, the Jefferson County Committee for Economic Opportunity, and the Center for Developmental and Learning Disorders in planning, providing, and evaluating a 6-week community nutrition experience for dietetic interns with the University of Alabama hospitals and clinics.During their experience with C&Y, the interns participate in the adolescent clinic by providing individual and group nutritional counseling to the patients. This counseling takes many forms; in some instances games are used to stimulate participation during a group session. For example, one intern devised a crossword puzzle relevant to a discussion on snacks.

(4) It is important to provide opportunities whereby patients and their parents can become actively involved in planning the nutrition program. Impromptu sessions are held often by the nutritionist. These sessions enable the nutritionist to be aware of some of the problems and interests of the patients and their parents. This then becomes a useful tool in developing and evaluating the nutrition program.

(5) Since obesity is a major problem among the adolescent age group, a series of special sessions were cooperatively planned with the teenage girls who attended the sessions. Various project disciplines participated in the program. Among the topics discussed were personal hygiene and good grooming. Physical therapy students from the University of Alabama in Birmingham discussed the importance of physical fitness and demonstrated various exercises which could be effective in reducing, strengthening, and toning different areas of the body. At another session, the girls prepared low-calorie snacks after which a tasting party was held. Interpersonal relationships were explored in one session. This proved to be very productive in that the patients felt free to ventilate their feelings in their relationships to their parents, siblings, and members of their peer groups.

(6) The project staff periodically plans, develops, and presents symposiums for project patients who have chronic illnesses. A member of each discipline presents information pertinent to his functional area. For example, if the symposium were for patients with diabetes mellitus—the nutritionist discusses the revelance of a diet as it relates to diabetes. Thus far, symposiums have been held for patients who have diabetes mellitus, hypertension, duodenal ulcers, congestive heart failure, and seizures.

(7) It is often more expedient for the staff to take programs into the community than it is for the patients to come to the medical center for a program. Project nutritionists participated with the nutritionists from the Bureau of Nutrition of the Jefferson County Health Department, the Maternal and Infant Care Project, the Jefferson County Committee for Economic Opportunity and the Center for Developmental and Learning Disorders in conducting budget food buying classes at various neighborhood service centers.

It has been well established that attitudes and habits toward food are formed in early childhood and these attitudes and habits influence the individuals' food practices throughout life. In order to influence the food habits of youths, it is important to have some knowledge of the food traditions in the different cultures. Food habits are ways in which individuals or groups of individuals respond to the kind, amount, and accessibility of available food supply and to social and cultural pressures.

Some food practices are the result of nothing more than habit. When an existing practice has been observed by a group, the members of that group probably continue it simply because it is easier than learning new practices. "Habits are hard to break"—and I think we sometimes forget that this applies to good habits as much as it does to poor habits. Food likes and dislikes may be associated with what food means to the individual. Hence, family relationships are an important influence on a child's eating practices.

A study of high-, middle-, and low-income families revealed that changing food habits of a family depends, to a great extent, upon changes in the psychology of the homemaker in the buying situation. Thus, the homemaker is identified as the "gatekeeper" of her family's intake of food stuff. Some educators suggest that individuals are most motivated to listen and to learn about nutrition during pregnancy, during the infant's first year of life and at age 10. These are the prime periods in a life span to work with the "gatekeeper" and the preadolescent to help formulate good food habits.

In answer to the question whether our program is effective in influencing the food habits of youths—the answer is in the affirmative. While progress has been made toward influencing the food habits of young people, considerable work remains to be done. We have learned that teenagers are strongly motivated toward improving their appearance. We have also learned the value of group sessions in which adolescents are able to ventilate their feelings on various subjects—especially interpersonal relationships in addition to discussing nutrition.

As a profession, nutritionists are greatly in need of developing tools by which changes in food habits and food acceptance can be easily measured and used. Only then can we accurately document change brought about by nutrition education and insure future support of current programs.

Schools

INNOVATIVE TECHNIQUES FOR TEACHING NUTRITION

Hazel Taylor Spitze, Ed.D., *associate professor, Department of Vocational and Technical Education, Division of Home Economics Education, University of Illinois, Urbana, Ill.*

I was delighted to be invited to share some of our recent informal experimentation in techniques for teaching nutrition. At the same time, however, I was quite frustrated as I tried to prepare a brief presentation that would fit into the Conference schedule. I wanted to share so many things! When you summarize months of work in a few sentences, you lose much. Summaries are abstractions and any abstraction, by definition, loses a great deal of the concrete examples on which it is based. Part of the loss may be excitement, part of it the humanness, part of it accuracy. Nevertheless, I'll have to summarize, but I'll try also to share a select few of the specifics and hope that you can read our reports, visit our exhibit, and see more.

First, I'd like to state some of the principles upon which we have tried to base our techniques. The literature contains ample research from which these principles have been derived.

You are doubtless acquainted with much of the criticism that is being directed to American schools. Authors like Holt, Glaser, Herndon, Dreikurs, and Silberman have said what many of us have been thinking. Many of our schools are not relevant enough; students are bored; and, often, teachers are bored, too. We know that there are many reasons for these things, and we believe that teaching techniques may be one of them. I am using Verner's[1] definition of teaching technique as "the relationship established by the educator to facilitate learning among a particular and precisely defined body of participants in a specific situation." In simpler language, it is what the teacher does to help students learn. We have been advising the teachers and student teachers with whom we work to try different techniques, to use variety, to create new ones, to find out which ones are most suited to their style of teaching, which ones are best for their subject matter and for the students they teach. We have urged them to make their choices on the basis of sound principles.

Here is my list. I don't claim that it is exhaustive nor that it is original. I do think that these principles apply outside the classroom as well as in and that they are applicable to learners of all ages and abilities. Parents, physicians, social workers, dietitians, and 4-H Club leaders can all use them when teaching is their aim.

(1) If the learning situation is a part of "real life" or seems real to the student, he will perceive the relevance and be more eager to learn.

(2) If the learner is actively participating, his interest is likely to be greater and achievement more rapid.

(3) If the learner is mentally and emotionally involved in the learning situation, motivation and learning are increased.

(4) If the student is involved in choosing the techniques to be used, he will be more accepting of the resulting situation.

(5) If the chosen techniques help the student to experience success, his self-esteem and motivation will be enhanced.

(6) If the student finds pleasure in the learning situation, he is more likely to continue learning.

(7) If the student develops skills for independent learning, he can continue to learn when no teacher is available to direct him.

(8) If the student sees usefulness in his learning activities, motivation will be increased.

(9) If the student develops positive attitudes toward learning, he will be more likely to continue learning independently.

(10) If the learner discovers an intellectual relationship, he has greater joy in learning and greater interest in continued learning than when he is *told* the relationship.

The application of these principles to the choice of techniques does not automatically rule out some and include others. It does suggest, I believe, that telling is not teaching. I, therefore, recommend that the "tell 'em and test 'em" routine be abandoned in favor of techniques which are more exciting, more fun, more meaningful, more participatory, more involving of learners, and *less* abstract, less tedious, less threatening.

A few teachers can lecture well enough to do some effective teaching by this method if they follow it up with opportunities for the students to apply what they have learned. They are the ones who have a "gift of gab," a sense of humor, an immense store of illustrations to recount when explaining the principles, some carefully chosen visuals to accompany their words, a willingness to be interrupted with questions, and an ability to gear their language to suit the learners. In a heterogeneous class with students who read at 10 different grade levels (and this is the usual condition in a high school class), this teacher may repeat his principles several times using different levels of sophistication in his language and supplying different kinds of illustrations to suit the different backgrounds of his students. Only a very few teachers can do all this. And even *they* need to use other techniques much of the time.

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[1] Verner, Coolie. *A Conceptual Scheme for the Identification and Classification of Processes for Adult Education.* Washington, D.C., Adult Education Association of the USA. 1962.

More teachers may be successful with other types of techniques, and, of course, all teachers are more skillful with some techniques than with others. If they use a variety, they can appeal to wide variations in students. Regardless of techniques used, the effective teacher must, of course, be very knowledgeable in his subject matter and very convinced of its importance to his students.

The most abstract technique I can think of, and the one I would most like to see disappear from classrooms, is the recitation. When students say that school is "out of reality," it may be because they have been subjected to too many hours of this "teacher-ask-question and student-give-specific-answer" routine. Does this type of situation *ever* occur *outside* of school? I think not. So no wonder they say *unreal!*

Now what shall we use to replace the abstract, dull, telling-and-testing techniques? One of the things we have been doing is developing games, not just entertainment but games which teach, games which require acquisition and use of knowledge to play and to win. Because we feel that nutrition is about the most important part of our home economics subject matter, most of our efforts have been turned in that direction. Some of our efforts have been published in our Illinois Teacher (especially, vol. 14, No. 1) and in the Journal of Nutrition Education and the semiprofessional magazine called, What's New in Home Economics. Some of the "new creations" have been mine and some have been those of student teachers and teachers in summer workshops.

Some of the ones I'd like to share with you today are some I've developed during vacation periods which have not been reported in any journal yet. This has become a sort of hobby of mine. We have tried them out with several different kinds of learners, including adults and slow learners in junior high school, but we have not done any real research with them yet. I do intend to do some if I can get the materials duplicated in sufficient quantity. Thus far, I have not been able to work out the problems in getting that done.

I think my most valuable creation is a card game. If played repeatedly, I believe it can teach the players the following principles of nutrition and supporting facts which build up to the generalizations:

- Diet affects health.
- Different nutrients have different functions in the body.
- Foods vary in nutrient value.
- Cost of food is unrelated to nutrient value.
- Caloric value of food is unrelated to other nutrient values.

Some of the specific facts and subprinciples which lead to the understanding of the above broad generalizations are:

- Iron deficiency causes a type of anemia.
- Anemia produces tiredness.
- No single food has, in one serving, enough iron to meet the RDA.
- One serving of some foods can meet the RDA for vitamin A value or vitamin C.
- Some high-caloric foods have considerable amounts of other nutrients and some have none.
- Some meats have the same amount of protein per serving as other meats at half the price.

The list is endless. All of these specifics add up to the generalizations which form the basic conceptual framework of the science of nutrition. The game does not, of course, teach all of the conceptual framework, but a surprising amount of it is included.

Here's how we play the game: We have a deck of about 150 cards representing the common foods. Each has the name of the food, the amount of one serving, the number of calories, the cost, and the percent of RDA (based on the woman 22 to 35 years of age) which this food has of eight different nutrients. The names of these nutrients are on the cards along with a spot of color which matches the color used on the National Dairy Council comparison cards for the same nutrients. We also have a colored picture of the food.

This deck is placed face down on the table and six of the cards are turned up. Each player then draws five of each of two other stacks of cards that represent money and calories. In turn they "buy" the foods that are turned up on the board, in an attempt to obtain 100 percent of the RDA for each of the eight nutrients while keeping cost and caloric expenditure as low as possible. When a player obtains 100 percent of any nutrient, he may call for a nutrient award card for that nutrient. New food cards are turned up at each turn and new money and calorie cards are drawn. Among the food cards are also shuffled 15 to 20 penalty cards. When one of these is drawn, the player must read the penalty aloud and suffer the consequences. These penalty cards are designed to teach the relation of nutrients and body functions. Each indicates some need for an extra amount of one or more nutrients, and that player must obtain more than the 100 percent to get that Nutrient Award. For example, one card says the player is pregnant and lists the extra needs for all nutrients. It also notes that if the player is male, penalty is void. Another card says player is overweight and must give the bank 200 calories, and another indicates an extra need for vitamin C because of tender, bleeding gums.

The game may be played in many variations, from simple to complex, by 2 to 6 players or 2 to 6 teams. A solitaire version is also possible. Those who have played seem to think it is interesting enough to play for fun, but we also observed that they were learning. It can be played without a teacher, or a teacher may heighten the learning by asking appropriate questions at appropriate times. Because of the colors and pictures, the game is expensive to produce.

Another game which has been well received where we have tried it is a board-type game we've called the Calorie Game. This one is scheduled to be distributed to HEEA–NEA members this year and to be available for purchase by others. Each player is given a certain amount of calorie currency with which to "buy" foods as he proceeds around the board via rolls of the dice. Most squares have a food picture, name, amount of serving and number of calories. Accompanying charts show the nutrient values of these foods in percent of RDA for eight nutrients. The object of the game is to get 100 percent of the RDA for all the nutrients before running out of calories—which is exactly the problem we all face every day. A few of the squares on the board say Win Calories or Lose Calories. If a player lands on one of these, he draws a card from the appropriate stack and takes the consequences—good or bad. The Win Calories cards say things like "You gained 290 extra calories by playing a fast game of tennis for an hour. Collect from the bank," or "You are underweight. Collect 500 calories from the bank." The Lose Calories cards say things like "You put 2 tablespoons of sugar on your cereal. Give the bank 90 calories" or "You played cards while the others fast-danced for an hour. Give the bank 261 calories." Three of the squares are marked "Wild Food Purchase." If a player lands on these, he may buy any single food on the board that he is able to pay for. At each turn the player marks on a special score sheet how much of each nutrient he got with that purchase, so he knows what is needed when he gets a "Wild Food Purchase" opportunity. He also discovers as he makes this record, that some nutrients are harder to get than others, that a varied diet is required to meet all the needs, and that he can run out of calories halfway through the game if he makes poor choices. Each time he throws the dice and lands on a food, he has the option of buying it or passing. It doesn't take long to discover that he'd better pass the candy and coke, and he may have to pass the chocolate layer cake and pot pie. These games are suitable and fun for families and other groups—even parties—as well as in classes.

We also have a puzzle which leads students to discover the eating pattern that is the Basic Four, but we never mention the words. We think they have heard of that so many times, from kindergarten onward, that one more time may be too much. We just let them see that each time the puzzle worked there had to be a certain number of pieces of each shape and that those of the same shape can substitute for each other in a balanced diet.

And we have some Learning Packages through which students, alone or with a group or a teacher, or both, may find out what they are missing if they don't like fruits and vegetables or what protein does for the body or how to find out how many calories they can eat and maintain their desired weight. All of these attempt to involve the student in *doing* things, for example, sorting a pile of cardboard food models into those which have a lot of vitamin A and those that do not.

We encourage the use of real life situations to teach nutrition, of course. For example, if a girl has skin problems or a weight problem or seems tired all the time, we question her privately as to whether her problem might be related to her diet. If she wants to work on it, we help her. If she is secure enough to do so without embarrassment, we let the whole class or some group within the class help her.

We share personal experiences, like the headache we got when we had to miss a meal or the tale of our neighbor who ate a very poor diet despite our attempts to educate her and then learned from her doctor that her many symptoms of malaise were due to malnutrition. The students plan a diet sufficient in calcium for the girl who does not like milk and discover that it's nearly impossible to get enough. Or one that has enough vitamin A for the boy who wants to live on hamburgers and french fries and discover that he'll just have to have more variety if he's going to avoid that deficiency. The students calculate how long it will take to gain 20 pounds if a person who has been maintaining a steady weight on his regular diet suddenly adds a coke and a candy bar each afternoon. That is usually a big surprise.

We also encourage the use of simulations when the real life situation is not possible. We write case situations, skits, and stories and we take great pains to use simple language so that *all* students can understand. We use role playing and demonstrations, often with students, rather than teacher doing the demonstrating. We set up inquiry sessions, a la Suchman, with questions like Why do Spitze beans have vitamin A and none of the other dry beans do? Students may ask questions that can be answered by yes or no, and they may continue to question as long as they get a *yes* answer. In this case, they discovered finally that I had soaked my beans in carrot juice instead of water, and so they learned that carrots are a good source of vitamin A and a good supplement for beans in the diet.

Another simulation is a set of insurance policies, for example, Anemia Insurance, complete with beneficiary, exclusions, and premium schedules.

We also create simulations of a more far-out sort on occasion. One day the nutrients held a press conference, another day an election in which all the nutrients ran for office and made speeches to convince the voters that they were most essential, and on still another we simulated a court and tried a defendant for malnutrition, complete with prosecuting attorney, lawyers, witnesses, and jury. A steady diet of such technqiues would, in the words of my 16-year-old son, be "sick," but for an occasional change of pace, they can be stimulating.

There is nothing new about the principles I have enunciated here, but they have been ignored for too long. Today's young people do not accept poor teaching quietly and take all the blame when no learning occurs. It is time that we work *with* students instead of against them. They need to be involved in decisions which affect them, including that of the choice of teaching techniques. We need to recognize the differences among them and not expect them all to do the same thing in the same way at the same time after having read the same assignment. We need to establish a learning climate in the classroom and in other groups where young people gather and let them see the teacher and other adults as partners in learning. In the learning environment which I'd like to see there would be no straight rows of student desks, no teacher's desk in the front of the room. There would be no grades or failure lists posted on the bulletin board. There *would* be flexible chairs and tables that are sometimes arranged in a big circle and sometimes in little groups. There would be an abundance of resource materials including books and bulletins on several reading levels, materials for displays, equipment for experimentation. This learning environment would be clean and attractive but not so orderly that it couldn't be used; it would be inviting, interesting, stimulating, and challenging. The students would have a positive attitude toward it because it would not be a place where they had experienced failure, humiliation, or boredom. There might be soft music sometimes, or new fragrances, or materials to handle or taste. We learn with all our senses. If students walked in and found no teacher present, they would explore and learn because they wanted to, perhaps each one, or each three or five, doing something different and sharing with each other in a cooperative way rather than the more common dog-eat-dog competitive way.

Sometimes, of course, all the class would do things together. At other times we might find four in one corner playing my nutrition card game, five in another playing the Calorie Game, one or two doing learning packages independently, three more calculating the nutritive value of the cafeteria menu, and two more in separate kitchens trying out recipes for making nutritious food more appetizing. Another group might be working with the teacher to see if the food allowance of public aid recipients can provide an adequate diet or to explore ways to get an adequate diet while traveling on a low budget or planning the food for a backpacking trip for next summer. If there was a student who, in spite of all these activities going on, was still not interested, she could suggest another project for herself—maybe a study of the astronauts' food.

If this sounds like a "happening," it is—a nutrition happening. If it sounds like an open classroom, it is that, too. But it is not unguided and certainly not purposeless. Students would have helped to set the objectives and to decide how to go about reaching them. They would also help in finding out whether they were reaching them. There might be tests but not for a grade. The students would ask for them so *they* could find out what they had learned. And there would be many other techniques for evaluation used, too. The students would enjoy learning, and I'd bet my hat that they would learn more than they do in a traditional classroom and that their diets would be better. Knowledge of nutrition alone is not enough to improve diets but it helps, and knowing that the teacher and fellow students *cared* would also help. As in Weight Watchers groups where each cares whether the other succeeds in losing weight, this learning group could be supportive in changing diet and improving health. Concepts like hidden hunger and hidden nutrition could take on new meaning. The latter includes examples like carrot juice in chili, powdered milk in cake icing, peanut butter and wheat germ in candy. Some students find great challenge in this kind of experimentation.

In such a situation as I have described, some would point an accusing finger at us and say we are too permissive. We are permissive of some things—creative thinking, for example—but we studiously avoid permitting others such as human indignity, unfairness, boredom.

Why do we think these so-called innovative techniques are more effective than the older ways? For an answer to that I go back to the principles. In the utilization of these techniques (1) the students are active participants, (2) the students are mentally and emotionally involved, and (3) the situations are real or reasonable simulations of reality. Further, the students are finding joy in the discovery of intellectual relationships, they are having a pleasant time in a nonthreatening atmosphere, and they are experiencing success. They are helping to make decisions and they are developing skills for independent learning. They are given opportunities to apply knowledge so that they can see usefulness in it. They are not all doing the same thing so they have something to share and competition is reduced.

Is this a utopian dream? I think not. It can be done without any new buildings and in some cases without any new equipment. As standard equipment needs to be replaced, gradual changes can be made without excessive expenditures. The main ingredients are teacher attitude and skill and administrative support. Most of my students are eager to try it. If you were their principal or on their schoolboard, would you encourage them?

FOOD PRACTICES AND EATING PATTERNS: A CONCEPTUAL APPROACH

ELENA M. SLIEPCEVICH, D.P.E., *director, School Health Education Study, Washington, D.C.*

To live at any given point in time is to live in an option-expanding world. We are, and increasingly will be, confronted with emerging options—some which are attainable and others which are not. There are countless options in selecting means of communication and travel, where we live—how and why—how we relate to others of our own generation, profession, and culture, as well as to other generations, professions, and cultures. Our options expand to new patterns of family life, ecological relationships, career choices, mood modifying substances, leisure pursuits, health services, political, philosophical, and ethical beliefs, and options for the kind and quality of education the young and old should receive and the way in which they should be educated.

The options for food practices and eating patterns are equally diverse and ever changing. Economic restrictions, what we eat, where, why, with whom, when, how, and, in the context of a few vanishing cultures, probably who we eat, are considerations that can be dealt with only within the context of *all* of the other life options from which an individual must choose. Food practices and eating patterns do not exist in a vacuum; thus, nutrition education must consider all of the societal, technological, and cultural influences that impinge on individual and group nutritional behavior.

If a person lives 30 miles from the job which he selects, or is able to obtain, then the time for commuting, the nature of that job, the people with whom he associates, the time allowed and facilities available for eating, the travel involved, and other factors, will determine what, when, and how he eats--at least one meal, and often more meals, a day. What you eat, when, where, and with whom while attending this Conference may be quite different from your eating practices if you were not here. Those who have lived in or traveled to other countries or even to other regions of the United States have experienced not only a wide range of different foods, but also diverse eating practices and customs.

Food means different things to different people. To some it may serve as a mood modifying substance to help alleviate feelings of boredom, loneliness, insecurity, tension, frustration, or sorrow. Under other circumstances food is a common and pleasurable denominator for celebrations, holidays, rituals, and as an expression of gratitude, friendship, and love.

The home, once the center for preparing and serving meals, has been supplemented by other settings—meals eaten from vending machines, in restaurants, department and drug stores, super markets, schools, colleges, and industrial cafeterias, in trains, airplanes, and automobiles, in parks, on streets, in one's work area, at picnics, churches, hospitals, camps, art galleries, museums, and sporting events. Business is transacted at lunch, romances flourish or dissolve, and diplomatic relations are cemented or cooled over the dinner table. And for others a bare minimum or substandard meals are necessitated by economic realities. The questions for some the world over may not be what will I eat, but *where* and *when* will I eat again.

The available options in the ever increasing variety, processing, and packaging of foods are enough, I suspect, to befuddle even a highly trained nutritionist.

Thus recognizing the interrelatedness of economic, cultural, emotional, social, geographical, and technological factors which influence our food selection and eating patterns, it is apparent that nutrition education which focuses primarily on food groupings and energy expenditure/caloric intake, is an inadequate approach that deals with only one facet of the complexity of nutritional behavior.

In the foregoing analysis the how and why of "food practices and eating patterns" as adaptable to the process of conceptual thinking has been explored.

So much for our options. What about our health priorities? How can nutrition compete with the other 40 or more separate health areas that demand time, support, and funding for school and other community programs? And how much competing is desirable? Does gaining visibility and attention for any given health concern today assure continued support a year or two from now?

Although we continue to talk about health as a totality in all of its dimensions—physical, mental, and social, our health programs are still far too fragmented and "disease oriented," even though references to concepts such as "prevention," "promotion," "conservation," "education," "comprehensive approaches," and "quality of life" are appearing far more frequently than ever before in professional and popular literature.

It seems that every categorical health area is caught up in what appears to me as a "revolving door syndrome." What or who goes in the door often seems to be influenced to a great extent by such opinion molders as the mass media, political leaders, and social critics, all of whom may depend considerably on their popularity and livelihood for new and dramatic issues and shocking statistics.

The "revolving door syndrome" results when many of the same old—and some new—health problems "queue up" for their chance to get into the line-up. "Don't shove!" "Don't push!" "It's my turn now!" "You were ahead of us in the 1950's, or was it the sixties?" "Can't you see my priorities are showing?" "We have the greatest constituency!" "Senator Marlboro says 'it kills good like a cigarette should!' " "Don't you know we rank second in the amount of money spent for advertising?" "Well, try harder; we're first." "Help stamp out VD, population, cancer, sickle cell anemia, heart disease, alcoholism, drug abuse, dental defects, mental health, human sexuality, and the environment." "Well, all right, stamp out the others —let's keep mental health, human sexuality, and the environment!"

Sometimes the language and means of communication change: "Uppers and downers" may still refer to things that don't come together properly/but *not* to teeth; "bread" in today's jargon may still mean the "staff of life" but not with the same meaning as once before.

But doors still revolve. One or more programs that have been authorized and appropriated go in, while others that have been abandoned and abolished go out—once again to take their place in line. Focusing on categorical health areas has potential value *if* the emphasis is sustained long enough to continue programs as part of a comprehensive and total health effort.

And what happens to those categorical interest groups and committed individuals who see as their priority the need for improving nutritional practices—they seem to be the "wait-watchers" waiting their turn, which seems impending. Even such a catchy slogan as "Better to go to waist (WAIST) than to waste, (WASTE) can be reversed easily by the ecologically-minded to suit their purposes.

In discussing the social issues of the moment, one hears frequently phrases such as "it's a different ball game now" or "we're in a different ball park." The rules of the game have not changed, unfortunately—nor the boundaries of the playing field—as both probably should. It is just the position of the players—who happens to be on first, who's out in left field—on the bench—or out of the game. And whatever team happens to lead the league one year does not assure their position or support in years to come.

This much we can say about health and other social issues: That depending on the decision-makers who may not always be the most capable of making the right decisions, we continue to live in a crisis-oriented society where too frequently "*programs* are eliminated while the *problems* remain." Piecemeal and fragmented approaches to health fail to recognize that a human being is not bits and pieces, nor can be fragmented nor neatly categorized.

The foregoing review of "ever-expanding options" and "shifting priorities" was included as a philosophical framework for describing briefly a curriculum design based on a conceptual approach.

The School Health Education Study, a nationwide, nonprofit educational project located in Washington, D.C., since 1961, is focused on a comprehensive health education curriculum, dealing with contemporary, realistic, and relevant issues and concerns. Three key concepts and 10 concepts, serve as organizing elements of the curriculum. One of the 10 conceptual themes is stated as follows: "FOOD SELECTION AND EATING PATTERNS ARE DETERMINED BY PHYSICAL, SOCIAL, MENTAL, ECONOMIC, AND CULTURAL FACTORS."

All concepts are interdependent and interrelated and evolve from a conceptual, theoretical framework in which health is viewed as a quality of life in all of its dimensions—physical, mental, and social.

The 18 Behavioral Objectives were derived for the specific concept mentioned above from a macroscopic and universal view of "food practices and eating patterns." Each objective pertains to all *growing and developing* individuals throughout the life cycle, *interacting* with others and their various environments, *making decisions* or evaluating decisions made for them by others. The entire program is flexible and adaptable to meet the varying needs, interests, and learning styles of students, and the cultural diversity of their communities, as well as the uniqueness of school administrative and organizational patterns. Emphasis is placed on self-directed learning for the student and continuing education for the teacher, who serves as a facilitator of the learning process.

The curriculum materials for each of the 10 concepts include four Teaching-Learning Guides (TLG's) covering a K–12 sequence, Levels I, II, III, and IV. Again, because of the program's flexibility to be adapted to a range of organizational patterns, such as middle school, ungraded and open classrooms, individualized instruction, and other variations, no grades are specified for the four levels. For example, in a traditional school organizational pattern, lower elementary, upper elementary, junior high, and senior high might be appropriate equivalents for the four levels; in other situations different adaptations need to be made.

For each Behavioral Objective there is an expansion of content stated in a conceptual rather than factual outline. Content and process are interdependent. The Learning Opportunities are designed to provide alternate ways of achieving the Behavioral Objectives and include many combinations of teaching-learning techniques. While developing Learning Opportunities throughout the project we have compiled a working list of over 250 "processes and behaviors" and over 100 different types of media and activities; together these offer an endless number of possible combinations.

Learning Opportunities are oriented toward student participation and lead the student to examine choices and issues, collect authoritative data, weigh options and alternatives, and to make decisions and judgments, recognizing consequences. The focus is on development of life-long skills and total behavior—what an individual knows, his feelings and values, and how he acts and why in various situations. Extension of learning experiences into multiethnic and various settings—family, neighborhood, local, State, national, and international—are reflected throughout the Learning Opportunities.

Evaluation is viewed as a continuing process throughout the teaching-learning situation. Evaluation Activities are provided which relate to the Learning Opportunities and back to the Behavioral Objectives. It is the responsibility of the teacher, student, school administration and community to decide what standards are appropriate in measuring student performance in a given situation; thus the Behavioral Objectives can be refined to the desired level of specificity.

In addition to the four Teaching-Learning Guides, there is a comprehensive Teacher-Student Resource Book covering the K–12 sequence. Except for some exceptions, entries were confined to materials published or produced between 1968 and 1971. Included for this particular concept are about 1,500 entries of pamphlets, books, reports, articles from professional journals and popular magazines, and educational media, including films, filmstrips, slides, recordings, pictures, transparencies, case studies, and simulation techniques. All of the pamphlet titles from approximately 90 different sources have been reviewed and permission to list them granted by their respective publishing agencies; dates of publication and applicable levels of progression are specified. All media entries are annotated, coded by suggested progression levels, and include dates of production.

An added feature of the Resources compilation is that a separate section includes about 800 current books and monographs on a variety of methods, techniques, approaches, environmental settings, and organizational patterns of teaching and learning to assist teachers in their own continuing education—and also for possible student use. For example, if a teacher or group of teachers want to learn more about use of simulation techniques in the classroom, life in the year 2000, what test scores mean, how to produce a film or filmstrip, how to teach toward inquiry, the nature of interaction analysis, team teaching, inner city schools, humanizing education, migrant children, the middle school, the year-round school, or many other topics, the bibliography should be a quick resource.

To supplement the TLG's and Resource books, visual transparencies based on the Behavioral Objectives will be developed for "Food Practices and Eating Patterns . . ."

The School Health Education Study nationwide K–12 curriculum materials were developed with the guidance and assistance of an eminent interdisciplinary Advisory Committee, a nucleus team of eight writers located in school and college systems, and a small Washington staff. The amount of research, study, discipline, and effort that has gone into the development of these materials is difficult to quantify. Hundreds of individuals, specialists in many different fields, from schools, colleges, governmental and private health agencies and organizations assisted in many different capacities throughout various stages of the curriculum development process and we are grateful for their interest and support.

> "The true intellectuals in our society are the children. Their lust for abstract conceptual reasoning is almost universal until it is crushed. Adult genius is just the part of childhood that is retained."
>
> William F. Johntz, Berkeley High
> School Teacher
>
> Source: THINK—Sept–Oct. 1970
> How to Teach the Esoteric Mathematical Principle of Infinite Convergence—and Make any Sixth Grader Eat It Up by George A. W. Boehm. (p. 10)

Voluntary Agency

GEORGIA TEENAGE NUTRITION PROJECT

Karen Morgan, *member, Georgia Youth Council, Buford, Ga.*

The Georgia Teenage Nutrition Project is the result of concerted effort among youth and adults to improve the nutritional status of Georgia's teenagers.

In the beginning, the Georgia Teenage Nutrition Project was cosponsored by the Georgia Nutrition Council and the Georgia Farm Bureau Federation. In 1964, the Georgia Nutrition Council accepted full sponsorship. A Teenage Nutrition Executive Board, set up by the Georgia Nutrition Council, gives guidance and leadership to the Teenage Nutrition Project.

The Teenage Nutrition Project has an Advisory Panel which provides policy judgment, financial support, and reviews project plans. Membership of Advisory Panel includes representatives of professional organizations in the nutrition, health and agricultural fields, State education institutions, State youth organization advisers, and food industries.

Financial supporters include business people concerned with production or marketing of food, or both, commodity commissions, banks, and professional organizations, and associations. The funds are used for:

1. Conducting an annual statewide conference.

2. Expenses of delegates while at the conference.

3. Expenses of Teenage Nutrition Youth Council representatives who develop plans for the statewide conference.

4. Printing brochures, handbooks, and other needed material.

A Budget and Finance Committee develops a proposed budget and submits it to the Executive Board of the Georgia Nutrition Council for approval. The committee works with the Finance Committee of the Georgia Nutrition Council to suggest donors for contributions. It also works with the Executive Committee and the Treasurer of the Georgia Nutrition Council to see that the project is operated efficiently within the budget, and that available financial resources are utilized to the maximum.

The major purpose of the Teenage Nutrition Project is to identify and seek solutions to nutritional problems of the State's teenagers. Specific goals of the Georgia Teenage Nutrition Project are:

1. To improve the dietary habits of teenagers.

2. To develop an appreciation of the food industry and its contribution to our high quality food supply.

3. To develop an awareness of our dependence on agriculture to provide an adequate quantity of food essential for health.

4. To develop an awareness of careers in food and related fields.

These goals are carried out primarily through a 2-day Annual State Conference. This conference is designed to:

1. Stimulate interest in improving teenage nutrition.

2. Provide opportunities for youth delegates to identify problems of teenage eating habits.

3. Provide information and ideas for nutrition projects.

4. Acquaint youth delegates with nutrition resources.

The first State conference, held in 1963, had as its theme, "Get Ready, Get Set—Go!" Some of the other themes have been "Good Nutrition—Where the Action Is," "Keep the Nutrition Ball Bouncing," "Sock It to Me—Here Come da Food," and last year's theme was "Nutrition Puts You All Together."

At last year's State Teenage Nutrition Conference, we had 160 representatives of 14 organizations. Youth organizations participating in the conference were: Allied Medical Careers, Atlanta Girls Club, Boy Scouts of America, Campfire Girls, Future Business Leaders of America, Future Farmers of America, Future Homemakers of America, Georgia Distributive Education Clubs, Girl Scouts of America, Key Clubs, 4–H Clubs, Library Clubs, Georgia Association of Future Teachers of America, and High School Nutrition Councils.

Any recognized youth educational organization and any high school nutrition council in Georgia has the privilege of participating in the Georgia Teenage Nutrition Project, provided the organization:

A. Serves teenage youth of 14 years of age and older

B. Has nutrition and/or career exploration in foods as a part of their program of work.

The Youth Council is made up of one teenage representative from each youth organization participating in the Georgia Teenage Nutrition Project and one representative for each 15 high school nutrition councils. Each participating organization selects a representative to serve on the Youth Council.

The Youth Council takes part in planning and execution of the Georgia Teenage Nutrition Conference. An adult chairman and a youth representative from each organization develop the conference plans.

Many youth assume leadership roles on the conference program. Adult advisers and members of the Georgia Teenage Nutrition Executive Board assist youth leaders in responsibilities for conference plans. The delegate's evaluation of the conferences indicate that teenagers prefer youth speakers and discussions dealing with their own problems.

The Georgia Teenage Nutrition Executive Board lends support and guidance for followup activities. They prepare exhibits which include three classifications. These exhibits are prepared by teenage council members. The three classes are:

1. Teenage Nutrition Project.
2. Food and nutrition related careers.
3. Relation of nutrition to teenagers.

They also prepare brochures for the youth, highlighting the importance of good nutrition and suggested activities to improve the nutritional status of young people, and brochures to interpret the project for adults and contributors. A bimonthly news release called "Teen Talk," a series of news articles, television and radio programs, and a survey to determine nutritional needs and interests are made available.

After the statewide conference, the Teenage Nutrition Executive Board evaluates the conference and suggests adult leaders to guide the project during the next year.

All committees that you see on figure 1 involve youth leaders in carrying out responsibilities.

Teenage Nutrition in Georgia has become a lively and exciting subject. Interest stimulated at State conferences and through other statewide publicity has spread to local groups and individuals. The real strength of the program has been (1) involvement of youth leaders and, through them, other teenagers, (2) help teenagers recognize their own problems, (3) encourage teenagers to assume responsibility for making needed changes, (4) give teenagers guidance in knowing what needs to be done, and (5) better informed adult leaders to help youth carry out goals.

Teenage Nutrition is on the move in Georgia! The Governor of Georgia proclaimed "Georgia Teenage Nutrition Week" in March. Some of the activities planned to be carried out during Georgia Teenage Nutrition Week by the 14 organizations are:

1. Present local television shows on importance of nutrition for everyone.
2. Stress to other teenagers that foods affect your offspring—that food affects the mental and physical disorders of your offspring.
3. Have fruit sales at breaks at school.
4. Have a school assembly on nutrition and include films such as "Food for Life."
5. Form Nutrition Councils in other high schools.
6. Have classes for mothers to show them the importance of nutritious foods and different ways to prepare them.

ORGANIZATION CHART OF THE GEORGIA TEEN-AGE NUTRITION PROGRAM

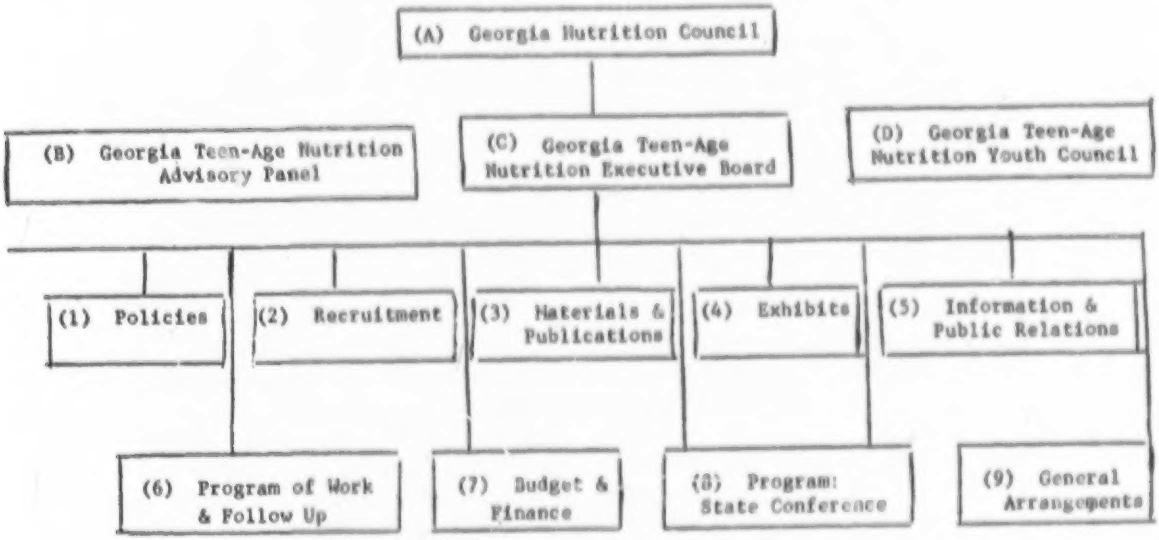
(A) Georgia Nutrition Council
(B) Georgia Teen-Age Nutrition Advisory Panel
(C) Georgia Teen-Age Nutrition Executive Board
(D) Georgia Teen-Age Nutrition Youth Council
(1) Policies
(2) Recruitment
(3) Materials & Publications
(4) Exhibits
(5) Information & Public Relations
(6) Program of Work & Follow Up
(7) Budget & Finance
(8) Program: State Conference
(9) General Arrangements

Figure 1

7. Spread the word on the importance of breakfast.

8. Lastly, it was suggested that a project is planned for survival cooking of nutritious foods:

> Snacks of frog legs which covers the meat group; edible plants such as cattails and wild onions covering the vegetable group; ground maize which gives you the bread benefactors; and milk from a goat (if you can catch one).

"Teenage Nutrition" is lots of fun in Georgia!

Industry

NUTRITIONAL AWARENESS CAMPAIGN, 1971

MILAN D. SMITH, *chairman, Food Council of America, Washington, D.C.*

It is a pleasure to be with you today to report on the Food Council of America's Nutritional Awareness Campaigns of 1970 and 1971. These campaigns presented a challenge to the food industry. The industry realized a serious national need exists. The citizens of this Nation, our customers, have shown themselves to be unaware of the need to eat a balanced diet every day. Although we offer all the elements of a nutritious diet in our retail outlets, too many consumers seem to lack interest in the health benefits to be gained from eating correctly.

It was to meet this need, to help reestablish the importance of a balanced diet, that the Food Council of America called upon the industry to embark upon these Nutritional Awareness Campaigns.

It is important to emphasize that the role of the Food Council itself is minimal. The council is an umbrella organization made up of the chief executive officers of the major food-oriented trade associations. This is an industry-wide effort and it is the industry which had to be concerned enough to want to help solve the nutrition problem. We believe that this has been the case. The Food Council has coordinated, urged, and helped in many ways, but it is the individuals who make up the food industry who have responded to the challenge and put forth their creativity and initiative to make this campaign meaningful.

This is not to say that the nutrition problem was solved in either 1970 or in 1971. It is to say that tangible progress has been made and an awareness on the part of the industry as well as the consumer has spread to the point that an atmosphere of sensitivity to the problem has been created.

The Food Council of America and the industry are committed to a continuing series of these campaigns to make every man and woman in the United States more aware of the need to care about what they eat and to keep them aware. This is an ambitious goal and our plans for achieving it are appropriately ambitious. For to do the job correctly we will require no less than *full* voluntary participation from the food industry. Having worked with the food industry for many years, having seen on a day-by-day basis the quality and humanity of the people who make it work, I am confident that such a goal is within reach.

The 1970 campaign was a start, and provided a learning period for the Food Council and the industry. As many of you may know, the Food Council decided to conduct these campaigns upon the recommendation of the Food Distribution & Retailing Panel of the White House Conference on Food, Nutrition and Health in December 1969.

Due to the shortness of time in organizing the first campaign, under the chairmanship of Clarence G. Adamy, President of the National Association of Food Chains, it was decided not to attempt a full-fledged nutrition education campaign. The fundamental coordinating tool within the industry was and is the campaign newsletter, AWARENESS, with a financed circulation of 10,000 company executives.

A simple but effective slogan was developed.

The slogan is "Eat the Basic 4 Foods Every Day." A specially designed symbol illustrating the basic four food groups was created. The regular advertising and promotional efforts of packers, distributors, and retailers were harnessed during September and October, using the slogan and symbol and reminding shoppers of all income levels of the ample elements of good nutrition offered in food stores and that consumers should work within individual budgets to choose well-balanced and nutritional meals for their families. What we were saying to consumers was "Think about what you are doing when you are shopping in a supermarket. Choose a variety of those foods that will give your family a balanced diet."

The months of September and October were chosen in 1970 and again in 1971 as a time of maximum concentration because that period is the time during which mothers are turning from summertime and vacation activities to the more serious business of putting youngsters from kindergarten through college back into school.

The council also plans to continue stimulating food processors, retailers, and other consumer service oriented sectors of the food industry to use the symbol and slogan throughout the year as part of regular advertising and promotional efforts, as well as supplemental nutritional information.

Here are a few examples of the 1970 campaign to give you an idea of its scope.

FAMILY CIRCLE magazine donated a full-color nutrition ad in 16 issues, beginning in September 1970, and the series is still continuing. This represents a half-million dollars in advertising space. The magazine also successfully encouraged its advertisers to use the "Basic Four" symbol and appropriate copy in a special section in the magazine each month.

Food processors contributed in a variety of ways in 1970 and continued in 1971. For example:

- Campbell Soup developed in-store materials, such as point-of-purchase displays and shelf-talkers, and advertised in seven major national magazines. Campbell's variation of the basic slogan said "Eat the basic 4 foods every day . . . a variety from each group means good nutrition."
- Minute Maid provided retailers a freezer cabinet card, slicks, and mats carrying the slogan and symbol.
- Del Monte produced a colorful and informative chart, wall-size and pocket-card size, that graphically and verbally explains the Basic Four and suggests daily consumption of portions within each food group. The chart is printed in English and Spanish. Del Monte also provided in-store materials.
- Quaker Oats Company used the last quarter dividend mailing to stockholders to insert a Basic Four message. Quaker also promoted nutritious eating in its recipe mat service to food editors.
- United Fruit Co.'s subsidiary, Inter-Harvest, produced a 28-page booklet to help mothers add vegetables to their children's diet. The booklet and the Basic Four slogan were advertised in national magazines.
- Kraft Company's Basic Four recipe brochure commercial on a network TV show drew over 800,000 consumer requests. Kraft also provided retailers with decals and overwire Basic Four displays.
- Bristol Myers' subsidiary, Drackett Products, produced a 30-second TV spot featuring Olympic Decathlon champion Bill Toomey promoting nutrition and the Basic Four.

Retailer initiative and participation was outstanding. Many purchased and used kits of banners, posters and shelfcards prepared by Kenyon & Eckhardt subsidiary, Food Advertisers Service. Approximately 13,000 retailers used the American Dairy Association's in-store material featuring the campaign symbol.

Examples of retailer participation included the following:

- Colonial Stores produced a campaign participation guide for each of its divisions, breaking down each week of the September-October period. Store display materials, newspaper ads, and radio and TV promotion were all part of this participation.
- Jewel Foods produced a comprehensive 2-month long program including advertising, in-store materials, and using volunteer U.S. Department of Agriculture Nutrition Aides and

Nutrition Club of Chicago members to give nutrition help in stores throughout the Chicago area.

- Acme Markets used the basic symbol and slogan within its overall theme "Choose Your Food Wisely for Nutrition Sake!" on store posters and on milk cartons.
- Many other chains designed variations around the symbol and slogan for newspaper, radio and TV ads, and in-store materials. Star Markets, A & P, the Grand Union Company, Safeway, Hinky Dinky Super Markets, Mayfair Markets, Kings Super Markets, Inc., Piggly Wiggly Corp., United Supers of Kansas City, and many more participated.

Other campaign participation included the following:

- Promotional assistance from the U.S.D.A. Extension Service and Information Division was obtained.
- The American Home Economics Association served as Nutritional Information Consultant to the Food Council of America. AHEA assisted in the production and promotion of an attractive nutrition pamphlet. Nearly a million were sold to manufacturers and retailers for distribution.
- Food industry trade press promotion and reporting of campaign activities was extensive.
- Newspaper food editors carried articles about the campaign and its goals in their food pages.
- And, of course, the food industry trade association members of the Council significantly contributed to the success of the 1970 campaign —in getting it organized—promoting participation by their members—and in implementing nutritional awareness projects.

I have concentrated on the 1970 campaign at length because almost every company I have mentioned has repeated, continued, broadened or deepened, or both, its campaign in 1971. For example, building on the experience of the 1970 campaign, Grand Union, First National, and Jewel, in cooperation with the Food and Drug Administration, have embarked on nutrient labeling tests and are using the Nutritional Awareness campaign to provide the necessary consumer education for their customers. The Cereal Institute's members joined together to put nutritional messages on their products, resulting in colorful, attractive, professionally designed information reproduced on more than *400 million* cereal boxes!

We are seeing with increasing frequency on national television, on packages brought home from the supermarket, in retail stores all over the country, the Eat the Basic 4 Foods Every Day message.

Since my election as Food Council of America chairman last November, we have designed new means to accommodate participants and to enlarge the scope of the campaign. For example:

- At the turn of the year, the 1971 Campaign was launched with a briefing in New York tailored for the advertising and food industry trade press. That was followed by a six-city tour—Boston, New York, Washington, Chicago, Los Angeles, and San Francisco—during which Bill Toomey and I briefed more than 250 processors, retailers, brokers, advertising executives, and trade press. The net result was a more informed food industry organized toward a more ambitious campaign.
- An information kit describing achievements and aspirations of the Food Council of America is available to potential participants or others who can contribute to the success of the campaign.
- Kenyon & Eckhardt's Food Advertisers Service again produced in-store kits for retailers. Some 3,000 have been distributed and used.
- The President's Council on Physical Fitness publicly recognized the value of the Nutritional Awareness Campaign goals and invited food companies' ideas for tie-in campaign participation projects.
- More than 30 food industry associations financially supported the administrative and coordinating expense necessary to promote unified participation and to service requests for information and assistance.
- The membership of the National Association of Food Chains formally resolved support of the 1971 Campaign and pledged to make it many times greater than that of 1970.
- *SUPERMARKETING* magazine volunteered support of the 1971 campaign by developing and publishing a special supplement to be widely distributed to the food industry In part,

it told retailers how to participate and why they should participate.

The peak period of September and October has passed and we continue to receive reports on what was accomplished. I suspect our annual report will not be prepared for another 3 or 4 weeks due to this pleasant documentation backlog.

We have been criticized for not doing enough, for being "superficial," for being "selfish." My only answer is a challenge to show me any other group that is *doing* more. Show me any other group that has reached more people with a simple understandable message and information to back it up.

It is absolutely in the best interests of the food industry to have a more nutritionally aware, more nutritionally discriminating consumer public. And the food industry realizes that fact. We invite and need the help and advice of every responsible group and every individual concerned with the health and welfare of the American people.

We hope that every one of you will support us in our programs to improve the eating habits of the American people. With growing support and proper guidance from nutritionists, home economists, scientists, government officials and individual citizens, the food industry can implement many positive projects which will generate for all of America's citizens improved dietary habits and better health.

NUTRITION IN PERSPECTIVE

RUTH M. LEVERTON, PH.D., *science adviser, Agricultural Research Service, U.S. Department of Agriculture, Washington, D.C.*

Some difficult situations have developed as a result of the recent outburst of enthusiasm for the subject of nutrition and food. The enthusiasm is encouraging, but it is also puzzling. We welcome the recognition even though it has been slow in coming. We regret the opportunity it has given fadists, zealots, and other extremists to increase their customers, profits, and power structure. We regret the meagerness of our professional staffs and materials with which to capitalize to the fullest extent possible on the public awareness that food is important to health. We find it hard to understand how so many people could so rapidly have become experts in the field without benefit of training and with their only experience in the field having been that of eating.

So we have problems! But we also have strengths; and you have been reminded of these during the past 2 days. Surely you would not have been authorized to come to this National Nutrition Education Conference if you and your supervisors had not been convinced that your particular program had strengths which would make it possible to deal with some of the problems by adapting and using some of the ideas we hope you are gaining here. As you gather ideas and momentum from this Conference for use in your own situations, it might be well to draw up a trial balance with debits and credits, problems and strengths. I predict that you will find more credits than debits. It has already been pointed out that some of the things we habitually think are problems can actually be strengths. For instance, great enthusiasm for the newest and latest facts need not be a problem but a strength to capitalize on in supplying accurate information. Interest in doing things in new and different ways, refusing to accept the Establishment's way of doing it, can be a strong motivation toward developing new and better skills.

The role that nutrition educators must play in the confused arena of food, nutrition, and health is a difficult one—one of the most difficult of all the professions involved. Nutrition education must form the bridge that carries appropriate information from the research and development laboratories to the public, the ultimate user. During transport, the skills and knowledge of nutrition educators, and their counterparts in related professions, must adapt the information so it can be applied to a variety of everyday situations and then "package" it for distribution in a variety of ways, either directly to the intended user, or indirectly through intermediate agents. It is the "everyday situations" that have changed more than the information we need to give.

In this important process of educating in nutrition, the professionals, particularly, and, to some extent, lay persons find themselves in an environment that is competitive and often hostile. On the premise that to understand our opponent is to increase our own offensive and defensive forces, I am going to discuss a few of the major situations in our environment with which I believe we must contend as we advance in nutrition education. These are (1) the prevalence of misinformation, (2) the distrust by a significant portion of the public of science and technology as related to the quality of our food supply, and (3) the preoccupation of many people with using their ideas about food as a panacea for the world's ills.

The prevalence of misinformation about nutrition and food is a serious situation and one that seems to be growing more serious. Widespread misinformation, however, is a characteristic of any society that enjoys freedom of speech and freedom of the press. Advanced technology in instant communication serves misinformation just as it serves accurate information. The more information that is available the more opportunity there is for misinformation. Some misinformation is fabricated but most of it has its origin in fact and much of it still retains a grain or more of truth. The extremists and zealots in the field of nutrition and food could not write and say as much as they do without frequently getting into the realm of truth. There are not enough words and different ways to put them together to avoid consistently stating some established facts.

Most of us would agree that misinformation is here to stay. We must learn to live with it in such a way that we will keep it as harmless as possible. We might begin by being more tolerant, more understanding of the people who we think are misinformed. When people ask questions they expect answers, few are satisfied with the reply, "We don't know enough to answer that," or "That is too complicated to explain. Just eat a variety of foods." They reason that surely someone has an answer, and they are right. There will always be someone who will provide an answer, whether it is right or wrong or a mixture of right and wrong. The questioner usually has no way to evaluate the answer and may not be interested in doing so —after all he has found an answer that satisfies him!

We need to intensify our efforts to keep accurate information before the public—of course, it must be pertinent and interesting. This will include anticipating some of the questions that are likely to be asked as a result of current happenings, news, and interests. One small example: After the Christmas holidays would be a most propitious time to make available sound information on weight reduction and calorie value of foods. Also with the great show of interest in vegetarian diets, we certainly must keep before the public information on the body's need for good quality protein, for calcium and riboflavin and B_6 and the foods that supply such essentials.

Perhaps we need to recognize that an answer including some of the complexities of what we do know may be more acceptable than no answer or an oversimplified one. Youth has a great capacity, as well as desire, for facts. "Eat a variety of foods and that will take care of your nutritional needs" may be generally true. But it is an extremely simplified statement and within some contexts it could even be misleading. Moreover, it will not satisfy the person who, justifiably or not, is concerned about some specific vitamin or mineral or even an amino acid.

Just now we are getting many questions from the public about trace minerals—especially about chromium and zinc. It is permissible to give the reply, "Yes, these are essential, but you need not be concerned about getting enough if you are eating a variety of foods." On the other hand, it is also permissible to give a little more information that might be more satisfying to some:

> Chromium has recently joined the family of essential nutrients. It has been shown to be needed for normal glucose metabolism and may act in tandem with insulin. There is fragmentary evidence that marginal

> chromium states may exist related to old age, pregnancy, and protein-calorie malnutrition. It is too soon to establish a recommended intake and there is no basis for recommending chromium supplementation. The availability of chromium in different foods varies greatly, but in general, animal proteins (except fish) and whole grain cereals are good sources of available chromium.
>
> Zinc has been recognized as an essential nutrient for some time. It is a constituent of many enzymes and operates in several metabolic pathways. Its availability from different foods varies. No recommended allowances has been established but diets with recommended amounts of animal protein seem to supply dietary needs of zinc. Meat, liver, eggs, milk, seafood, particularly oysters, are good sources of available zinc.

In connection with trace minerals, we can always remind your questioner that iodine is a trace mineral about which we do know a good deal—the result of deficiency and how to avoid the deficiency by using iodized salt. Here is an example of there being specific information available but many people neglecting to apply it. They want only the new things!

The indiscriminate distrust of scientific and technological progress that is displayed by many self-appointed guardians of our welfare—guardians who encourage others to be distrustful, too—is another hazard in our nutrition and food environment. The surge of interest in buying "natural" and organically grown foods is one manifestation of this distrust. This has led to a tremendous increase in the number of stores that sell what they purport to be organically grown foods.

The proponents of the value of organically grown foods claim that fruits and vegetables and cereal grains fertilized with animal manure or green compost are filled with "natural" vitamins and minerals never found in foods fertilized with inorganic phosphates, nitrates, and potassium. Research, however, has established that generally elements essential to plant growth enter the plant in the inorganic form. If an element is originally present in the soil in the organic combination, this organic combination is broken down to an inorganic form by the micro-organisms in the soil before the element enters the plant. Using only organic fertilizers means that any nutrient deficiency in the soil will be perpetuated and aggravated rather than remedied. Organic fertilizers can only return to the soil the elements the soil yielded in producing feed to be recycled through the animals in order to produce manure for organic fertilizer.

There need be nothing wrong with organically grown foods. If they are produced closer to where they are sold so they are fresher and have a more vine- or tree-ripened flavor than some that are shipped cross country, this is understandable. Also, if there is an aura of the "return to nature" in using foods in their more natural, pure state, this too is permissible (except for the use of raw milk). But such choices should not be made in the name of getting a more nutritious diet. The greater cost of the food that is claimed to be organically grown may buy certain desirable characteristics that may not always be found in the usual food market but greater nutritive value is not one of them.

Some of the natural and organic food stores also promote a wide assortment of vitamins and minerals and other nutrient supplements for which astonishing health claims are made. No doubt many of the supplements such as vitamin C, thiamin, and vitamin A, calcium and iron are produced by chemical synthesis or sold as inorganic salts. Doesn't it seem inconsistent that the stores that promote specially grown foods because they are supposed to be more natural, complete and nutritious also sell a tremendous array of special products—pills, capsules, extracts, and combinations thereof? Most of these products have undergone little if any testing for efficacy and safety. The commonly used pesticides about which the extreme environmentalists are so alarmed have undergone much more stringent and extensive testing than the products of the food extremists.

Some people are going to extremes in focusing on their food as a means to achieve a better way of life and this is another situation with which we must contend today. This preoccupation with food may take the form of spending a disproportionate amount of time and money securing special nonconventional kinds of food, or it may be the basis for an entire life style. The effective nutritionist has always recognized that food in our lives means much more than just the way to keep the body supplied with energy and nutrients. Food has always had many meanings, purposes, and associations and much of the training for meaningful living at every age occurs in association with food. But some people have carried this concept too far. Cults have developed around extreme, often false and sometimes dangerous, ideas about food and health. These appeal to young people especially, who follow them with religious fervor as a means to spiritual awakening, inner peace, and personal salvation, as well as to vitality and clear thinking. Joining such a cult is also one way to protest the Establishment, the food industry capitalists, and even man's inhumanity to man.

Probably every society in history has had some unusual diets and eating patterns. Just because a food practice or idea differs from our more established, conventional ones is no basis for branding it as a mere fad or its user as a fadist. We all subscribe to the principle that there are many different ways to build an adequate diet. Nor is every item of misinformation that exists about food, health, and diets harmful. But certain extremes are too dangerous to be ignored. A pertinent example of such an extreme is the Zen Macrobiotic Diets which has become increasingly popular with the young people. The Zen Macrobiotic system of diets illustrates the hazardous extremes to which strict vegetarianism and ideas about natural and organically grown foods can be carried.

The diets are purported to be fashioned after that of the Zen Buddhist monks, but this is not substantiated by fact. "Macrobiotic" refers to the art of prolonging life. The diets were originated by a Japanese, George Ohsawha, and involve the proper balance between foods that are categorized as "Yang" and foods that are categorized as "Yin." Yin foods produce silence, calmness, cold, and dark and are generally associated with fruits and vegetables and are tropical or grown in the summer. "Yang" foods produce sound, action, heat, and light and are generally associated with cereals, salt, and animal flesh and are grown in winter. This absurd classification need not be alarming from a nutritional standpoint and the early stages of the diet regimen need not be inadequate. But the goal is to omit gradually everything from the diet except cereals, and to live chiefly on brown rice.

There are 10 stages of the diet regimen, numbered from No. 3 to No. 7. The first level, Diet No. -3, is composed of cereals, vegetables, fruit, seafoods, and desserts. The diet progressively diminishes to the highest level. Diet No. 7 is composed only of cereals, chiefly brown rice. The follower is encouraged to try the particular diet that helps him achieve a state of "well-being." Once he achieves a certain diet level, he then promotes himself to a higher level and ultimately to the all-cereal stage. In addition, fluids are to be avoided as much as possible. No medicine is to be taken, no doctors are to be consulted because every individual must be his own doctor. Cancer is to be treated as follows: "No illness is more simple to cure than cancer (this also applies to mental disease and heart trouble) through a return to the most elementary and natural eating and drinking: Diet No. 7." It is particularly sad when parents try to rear young children on such limited diets.

In the October 18 Journal of the American Medical Association, the Council on Foods and Nutrition issued a warning against the Zen Macrobiotic diets. Cases of scurvy, anemia, hypoproteinemia, hypocalcemia, emaciation due to starvation, and other forms of malnutrition, in addition to loss of kidney function due to restricted fluid intake, have been reported, some of which have resulted in death.

We have the opportunity to use the strengths of our individual and collective programs to put these and other undesirable situations in perspective. This cannot be done by open, direct combat, because the opponents are not hindered by having to honor facts. We can do much by continuing our help to the people who want facts. We can help them get these facts from reliable sources and in the context of the total picture of food in their lives. For active, inquiring young minds we can pose questions that give the young questioner a broader view. A few questions on organic farming might be: How much manure and compost would be needed to raise enough food for the city of his residence? Since yields are lower when organic fertilizer is used, how much more land would be needed than is now in use to produce the food? What would this land cost per acre and who would pay for it? Where could the waste and compost be produced and how could it be distributed? What would be the effect on pollution and the efforts to have clean air? The students could gain much by investigating and evaluating the sound, technically sophisticated proposals being made for the recycling and use of all biological waste.

Another investigation might include tracing the origin of some of the food that is sold as "organically grown." There are many indications that much of the food sold as organically grown is actually commercially grown and bought by the store owner at the usual commercial warehouse. I have read that some honey is advertised as organically produced. How did the bees know what the flowers were fertilized with? There is almost no end to the kind of pertinent, searching questions for which we can send our young people to find answers. For instance, if they are protesting man's inhumanity to man, how do they justify a food production and diet scheme that, if adopted widely, would result in such a reduction in supplies that famine and death would be the fate of many people?

We must help people realize that we are not living in a simplistic food world where decisions can be made isolated from all other aspects of our complex world. We have to learn to choose among several alternatives. Sometimes the choice may be as simple as whether to learn to always wash fruits and vegetables well before eating so we can have an abundant supply of high-quality products at a reasonable price or whether to avoid all pesticides and accept a high-priced, probably lower quality, product that is pesticide free but scarce. Some choices are more complicated. Whether simple or complex we must stretch our own minds beyond the narrowly focused view of "a problem" and see the nutrition or food-for-people component in perspective.

In closing I would like to suggest that while we are seeking to see things in perspective, we ask ourselves "Are we bringing everything of value with us into this new commitment to improve nutrition education?" In the race to the bandwagon we must guard against abandoning all sound knowledge and good practices just because they existed as long ago as 5 or 10 years. In our enthusiasm to adapt to the times and aggressively seek new approaches and tolerances, we must not neglect, or worse yet, discard, the deeper human values associated with food-and-family. These, too, we must keep in perspective.

RELEASING YOUTH POTENTIAL

CATHARINE V. RICHARDS, *chief, Youth Services, Office of Child Development, Department of Health, Education, and Welfare*

Not too long ago youth and adults struggled with defining social problems and carved out recommendations for national action. These youth reflected the youth population of the Nation. The occasion was the White House Conference on Youth.

The many strong divergent voices at the Conference were joined in a preamble to their report. This preamble speaks eloquently about life today. It says, in effect, although the problems never looked tougher, the prospects for solving those problems never looked brighter.

With conviction and commitment, these young people said:

> We are aware of our responsibility to fight for the rights of all people. We recognize that we in the United States of America have strayed from the fundamental tenet of this Nation, that the government is responsible to the people, in whom power resides, and that the people are therefore fully responsible for the policies and action pursued in their name.
>
> We, as have so many before us, dedicate ourselves to struggle and sacrifice for the realization of the ideals embodied in the program set forth.
>
> Out of the rage of love for the unimplemented principles we here assert, we challenge the government and power structures to respond swiftly, actively, and constructively to our proposals. We are *motivated* not by hatred, but by disappointment

> over, and love for, the unfulfilled potential of this Nation.

This statement may be viewed as the rhetoric of idealistic young people. However, this statement may be examined for clues on what are the ingredients of motivation.

The youth representatives were selected from a class of citizens, that is, young people 14 to 24 years of age. Each was *chosen and invited* as *a person* to *do* an important job with recognized leaders of governments, commerce, and the human services such as medicine, education, religious institutions, and similar essentials. These youth were asked to tackle a problem that was worthy of their intellect, time, and abilities in cooperation with persons generally recognized as "important" and "significant."

As you know, "motivation" like all of human behavior is a complicated process. The process involves arousing action, sustaining an activity in progress, and regulating the patterns of the activity. It seems to me that is the volunteer's or staff's view of what they are about. But, in the eyes of a young person, what is helpful to him is:

1. Someone who respects him as a person;
2. Someone who lets it be known that he likes the young person;
3. Someone who listens, who hears, and who having heard, understands;
4. Someone who is fair and firm;
5. Someone who stands up for him;
6. Someone who is capable, sees what can be done; sees possibilities of the young person and works with him to do what can be done.

Possibly an illustration will help us get this flood of words into a useful focus. In Vermont, one of four young panelists was a school dropout and a delinquent. In the orientation session, he fascinated all of us with what he was doing with the mentally retarded children. In due time, the panel made its presentation to a State Conference convened by the State Committee on Children and Youth. We were talking about What Gets in the Way of Youth Being and Becoming the Person He Wants to Be. This young man blasted the depersonalized schools and observed that he "couldn't wait to get out of school so he could do what he ---- ----- pleased." The panel leader reminded him of the outstanding work he was doing with the mentally retarded and then asked: "In your work with the mentally retarded, do you do what you please?" He pondered for a while; then he grinned widely and answered with a tone of discovery: "I guess what I please to do is what is going to help them." This young man had grown up. That was the motivation?

1. A very skillful supervisor respected herself, this young person, and the mentally retarded children they were serving.
2. The supervisor involved this youth by *showing* him what he could do; by illustrating how well he was doing from the work he was doing that both had seen.
3. The supervisor opened the gates for the youth to go through to other supplemental experiences that reinforced his new view of himself—as a capable person doing something that needed to be done and doing it well.

Factors that are elements in motivation are the cumulation of experiences of growing up; the peer influences; and the interacting dynamics of the society. With all of that facing you what may be some handles for action with youth?

A beginning point is accepting the fact that the world about us has changed, and is changing—rapidly and pervasively. This does not necessarily mean the world is going to "pot" nor does it mean unless we return to the past we are doomed. Rather it is to say, that we are confronted with the challenge of assessing these new situations and figuring out with young people what can be done and setting about doing it with them.

In these affluent times when youth never had it so good, most young people must live with the poverty of experience. Ever since Sputnik our schools have increased and accelerated academic instruction. However, for many complex reasons, our schools have not been able to provide opportunities for experiences that are consonant with the instruction. Further, there are few communities that have been able to organize their resources to provide the opportunities young people want to do something important, to do something that is needed and useful, to do something worthy of their abilities. Simply stated, instead of including youth in our society as responsible, needed participants, we are increasingly excluding them. We demand that they learn responsibility by depriving them of opportunities to carry responsibility. We expect adults to participate actively and creatively in society, but we exclude young people from sharing that experience with us.

Adults and youth live with the great delusion that everything can now be done with speed, electronics, and chemicals. Many things can. But the development of young people requires the thoughtful attention of caring adults with patience, humor, and respect of young people.

As adults, the experiences we had as adolescents are not relevant to situations today. They are new, unlike anything before. The contribution we make to youth is helping them with *problem solving* and the *use of principles* we can abstract from our experiences.

Young people, and adults, have need for response—to be wanted—to have someone who cares. They need also to belong and to have access to an understanding person. Adolescence is that time when young people reach out for new experiences; not only going places and doing things, but the chance to assert himself. He pushes hard for self-reliance, self-realization, self-confidence, self-esteem, self-expression, and self-control.

Because they haven't had the many experiences necessary to integrate emotions and intelligence in wise judgments of diverse and complex situations, youth can use the help of friendly consultants.

Consultants are persons who know how to get things; they are folks who can raise questions that help the less-experienced person think about possibilities, alternatives; and perhaps suggest the various qualities and abilities the youth has used in other circumstances that will be handy in handling this new situation.

Although the world has changed and is changing, the tasks of adolescents are as they have always been. However, managing these tasks is increasingly difficult in our urbanized society. Opening the gates to experiences youth need for growing on is more difficult than motivating youth.

For example, a while ago a volunteer working with a club of girls 12 to 15 years of age in a low-income neighborhood searched for a problem the girls could tackle. The solution to the problem could not cost money; should be manageable and useful; and should be something that could be accomplished within a reasonable time period the girls could understand. The best of several possibilities was reading to preschool children of Spanish-speaking families. The girls were told the neighborhood had a problem:—The children of the Mexican-American families couldn't pass the reading readiness test for entering first grade. Would they like to help these little children do better? If they chose to, they could participate in a research project. They were then told what was to be required of them. They would have to give 1 hour each week to preparing to read; 1½ hours reading to children; and one-half hour conveying them home from the center. The girls were to be paid one dollar an hour, not because that is all the service was worth but because that was all the money we could raise. The $3 a week was more than they had before so that was one reason why they were interested. The other reason was that they had been asked if they wanted to tackle a difficult problem, important to little children, their parents, the school, and the community. Further, the project had the dignity and status of a research effort that required a commitment from the club members. You will recall that mention was made that opening gates of opportunity for youth to manage the tasks of growing up was more difficult than motivating the youth?

Some barriers that had to be removed included the view of the teachers of the girls who noted these girls were poor readers. The view of the center that held to the view if these girls were paid they never would volunteer for anything ever again. The view of the neighbors that these girls were "a wild bunch who couldn't be trusted to do anything but make trouble." The volunteer had to hold steady to the position this was an experience the youth needed for learning by doing some of the essentials of what is involved in being a citizen, being a parent, and in careers in the human services such as teacher, librarian, and social worker. Further, the volunteer had to hold steady with the members of the club so that they knew she had confidence in their abilities, she respected them, and she would stick with them to get the job done as well as the club knew it could do. The members of the club learned to read because they had a reason for learning to read. Girls who hated school and tests couldn't wait to find out: "How did our kids do?" As could be expected, the children who had been read to by the girls did better than the control sample. Further, through the device of sending a book-of-the-week home with all the reading program participants, those read to and the readers, Spanish-speaking mothers, on their own, asked the center to help them learn English so they could read to their children.

This illustration says in essence—the motivations of youth can be activated and provided focus by activities of value to others; activities that engage the intelligence, energy, and capabilities of youth.

A framework for such activity *is those social situations in the community that can be improved* and *the developmental tasks of adolescents.* Robert Havighurst of the University of Chicago describes these tasks for youth.

1. Accepting one's physique and accepting a masculine or feminine role.
2. New relations with agemates of both sexes.
3. Emotional independence of parents and other adults.
4. Achieving assurance of economic independence.
5. Selecting and preparing for an occupation.
6. Developing intellectual skills and concepts necessary for civic competence.
7. Desiring and achieving socially acceptable behavior.
8. Preparing for marriage and family life.
9. Building conscious values in harmony with an adequate scientific world-picture.[1]

I have tried to say that the world has changed and is changing. We can help youth release their potentials by using our experiences to assess the world about us and to engage the youth in tackling the problems facing us. They cannot use our experiences of the distant past. Those experiences are irrelevant. What is relevant, central, and crucial to the development of youth, is that caring, capable adults view youth as competent individuals who need desperately to be counted in, and counted on, in our continuing struggle to achieve the hopes and promises of this great Nation.

We are asked, not to seek keys for motivation, but to identify activities worthy of their abilities, energies, and intelligence as individuals and as participants in a democracy. We are asked to open gateways to opportunities that will involve them in managing their own development and in carrying their share of creating the quality of life equal to the hopes sketched in the Preamble to our Constitution—Those visionaries said: "We, the people, . . . in order to form a more perfect Union establish . . . insure . . . provide . . . promote . . . and secure. . . ." Those are action principles. Each of us can do no less than to help young people be and become the persons they want to be by respecting each young person and giving meaning to our intent, not by words, but by our actions.

Questions Following Dr. Richard's Presentation

1. Illustrate your feelings about working with youth in terms of nutrition.

   It seems to me that there may be at least two ways of involving youth in good nutrition:

   (1) One way is through their interest in their developing bodies; their growing curiousity about possible careers; and in exploring their town and the people who keep it operating in good health;

   (2) Another way is that of engaging their interest in solving a social problem in the community that involves nutrition or possibly the lack of nutrition. They might serve as aides in Head Start, Day Care, or Meals on Wheels programs for the elderly. This would call for presenting the problem to them and discussing with them what could be done to ensure these preschoolers or Senior Citizens of adequate and attractive nourishment for their bodies and social well-being.

Obviously, I think that nutrition for young people must be viewed and tackled in a social context as well as in the physiological, biological, and aesthetic contexts.

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[1] HAVIGHURST, R. J. *Developmental Tasks and Education.* Pp. 30–55. New York: Longmans, Green. 1951.

2. Would you speak specifically about ways of involving teens in nutrition education programs.

Many adolescents are very interested in how to make the most of what they have going for them. To the extent that nutrition can be related to their appearance, energy, social capability (such as hosts or hostesses of parties, picnics, and operators of snack bars) they will be interested. Further, they may be considering setting up their own apartments (or wishing they could). If so, they may want to try their hand at "living luxuriously on a little cash."

Possibly a quick way to involve young people is to respect them enough to state a problem situation to them such as 40 percent of the children at the Lincoln Housing Project are malnourished. These are some of the consequences of this situation. These are some things that could be done. This is what may be required. Do you want to help change the situation and their life chances? This may be more than you as Nutrition Educators want to bargain for, but it is these problem situations that will give new meaning and purpose to nutrition. From experience they will learn about nutrition and its importance to human well-being, as well as about themselves and the people of their community at a time in their lives where this is crucial to their development.

SUMMARY OF THE CONFERENCE

Juanita A. Eagles, Ed.D., *chairman, Conference Program Committee, Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Hyattsville, Md.*

It might be worthwhile at this time to consider the objectives we set for ourselves in planning for this Conference to see how the proceedings of the past 3 days have contributed to the attainment of these aims.

The first objective was to look at youth today—his values, life styles, eating habits, and health.

It has been pointed out by several speakers that there are rapid and great physical and sensory changes taking place during adolescence and that these changes alter youth's views of himself and others. It was stated that a fundamental task of the professional person working with youth is knowing, and interpreting to him, the meaning and adequacy of the changes taking place in terms of his role in his community and in preparation for his life as an adult.

Emphasis was placed on the importance of considering the adolescent in terms of his stage of growth and development, rather than by age. In studying growth and development of youth, we must not only compare the adolescent with others through the use of standards, but also study him in relation to himself through the use of sequential values.

One usually cannot evaluate nutritional problems unless one has a fairly good picture of the total health problems of the individual. This was borne out by discussions on the first day of the Conference. It was shown that special consideration must be given to those disease problems of youth which have special complications and risk and to those which hold important consequences for later life. It was pointed out that requirements for calories and certain nutrients must be related to this period of increased velocity in biologic growth during adolescence.

Youth must choose his own beliefs, values, attitudes, and behaviors from an array of alternative beliefs, disbeliefs, attitudes, values, and behaviors presented by society and the community to its members. Both formal presentations during the Conference and the comments of panel reactors indicated that many factors influence decisionmaking by youth, some factors coming from within the individual, some coming from outside the individual, and some dependent on the abilities of the individual.

The second objective was to look at youth in his environment—physical, biological, and social. The discussions during the 3 days of the Conference have shown that we cannot isolate one part of youth's environment from another and that there is great interplay between youth and the various phases of his environment. It was pointed out that our entire way of life is changing more rapidly than we as educators have changed our approach. There are major changes in food supply and eating habits that should be of concern to those working with youth.

We were told that there are major situations in our environment with which we must contend as we advance in nutrition education. These situations include the prevalence of misinformation; the distrust of certain youth, and adults, of the science of nutrition and technology as related to the food supply; and the preoccupation of many people with using their ideas about food as a panacea.

The third objective we set for ourselves was to identify effective ways of working with youth in providing support in the development of his food habits.

We have heard about a variety of learning experiences which have been proved of value in particular situations. We were told that the effective learning opportunity is oriented toward student participation and leads the student to examine problems and issues, to collect authoritative data, to weigh options and alternatives, and to make decisions and judgments recognizing consequences.

It was brought out that nutrition education planned with youth is more effective when a scientific approach, technical terms, and a team effort are used.

We were concerned with how we can get youth to act; that is, how can we help them to be motivated. We were told by youth in the panels, perhaps not by actual words but by inference, and by several of our speakers that youth is helped by someone who respects him as a person, who lets him know he is liked, who listens and therefore understands him, who is fair and firm, who is capable and works with him allowing him his freedom and independence, allowing him to engage his intelligence and his energies, and providing him an opportunity to make his own decisions.

As we consider the proceedings of the Conference and our own programs, we can begin to analyze strengths and weaknesses of our programs and make recommendations for revision. Some of the words which I shall carry from this Conference to guide me are "change, growth, development, teamwork, involvement, enjoyment, good food."

We think you will agree that there is much to be done in securing more scientific knowledge about youth and nutrition. Information is needed especially about how best to "sell" nutrition to youth at the program level.

PLANS OF ACTION FOR FOLLOWUP OF THE CONFERENCE

The National Nutrition Education Conference closed with a working luncheon during which participants were asked to relate the Conference to their professional activities upon returning home. Participants were seated with others from their State or region. They were asked to discuss three topics and to submit notes of their discussion for inclusion in these proceedings.

Most of the groups limited their discussions to generalities as opposed to particular plans for specific projects. Discussions by the participants from the various regions of the country were similar. The statements made below in response to the three questions are a composite of the feelings of the Conference participants.

1. What are some of the problems related to nutrition that have been identified at the Conference as of concern to youth?

The nutrition oriented physical problems of greatest concern in youth are obesity and those pregnancies which occur during adolescence. The increased use of organic foods or fad diets when they are not accompanied by advisable nutritional habits are a potential concern. Misinformation and the lack of information increase the susceptibility of youth to unwise food habits and decrease opportunities to develop individual yet nutritionally sound eating patterns.

Additional problems are encountered in conveying nutrition information to youth. Those who are responsible for working with youth are handicapped by a lack of understanding of the attitudes and values of the group they are to help. Professionals need to have an idea of the life styles of youth so that they may understand youth and help him build sound nutrition habits. On the other hand, those who do understand teenagers and know how to work with them, the teachers, often do not have any training in or knowledge of nutrition, and so they, too, cannot serve as effective nutrition educators.

Often, it is difficult to get the interest of youth directed toward nutrition. We need to develop in youth an awareness of the importance of nutrition and what one eats. In the consideration of teenage eating habits, the impact of the family role is often not recognized. Research indicates that most students are positively influenced by family attitudes and habits.

Teenagers devote a great deal of their time, interest, and energy to school or school-related projects. Therefore, the role of the school in influencing students' nutritional habits is important. The school lunch program poses many problems. First, the food itself, in particular the vegetables, are frequently unacceptable to the students. The lunch program often fails to serve additionally as a source of nutrition education. The food service personnel are frequently not considered (by the rest of the school personnel) to be possible teaachers and so their potential as nutrition educators is lost. School administrators often do not lend support to nutrition education programs.

The life style of youth has caused a shift from three meals a day to consumption of more frequent snacks. Because of the increased prevalance of snacks, the snacks must provide nutrients in addition to calories. Both the teenagers and their parents need to be made aware of the need to select desirable and nutritious snacks at and away from home. Often, the variety of available snacks is very limited and unsatisfactory.

2. What are some of the *ways of working* with youth that have been identified at the Conference which you believe will be effective if adapted to your area?

Of primary importance in working with youth is involving the youth in planning and presenting the programs. Organized youth groups, particularly youth leaders, should be contacted and interested. The self-assessed nutritional needs and interests of the local youth need to be determined. The aid of professionals in other disciplines would be helpful in efforts to better understand the effect that changes in society have on nutrition of youth.

Once students' interest is aroused, organization of a teenage nutrition council might be successful. It is essential to enlist qualified adult leaders for these nutrition youth groups —adults who will listen and who will be sympathetic to youth.

Nutrition needs to be included with more frequency in the school curriculum. To reach the boys, instruction in nutrition must also be offered in courses other than home economics. Currently, teachers may receive no instruction in nutrition in their teacher training courses. Nutrition education courses for teachers both preservice and in-service would greatly increase the incidence of nutrition education in the schools and enable incorporation of nutrition into all course materials. Professionals outside the school system could help in the development of multidiscipline approaches to the nutrition curriculum.

It is essential to provide youth with relevant, practical, and sophisticated facts. Sequential programs of information must be presented. Subject matter should be presented in terms of nutrients and food groups. Popular factual reliable literature for youth is greatly needed. Games and other new materials can be effectively used to teach nutrition facts and concerns. Students can be encouraged to solve nutritional problems of interest to them. In short, innovative teaching techniques are essential.

The school lunch occupies a strong position in school nutrition programs. The problems with the school lunch can be attacked by several methods, among them:

- Having advisory boards of high school students work with food service personnel to enable communication on the complaints, problems, and suggestions of both.
- Food service personnel could be trained to

serve as nutrition educators in expanded school lunch activities.

- Student cafeterias could be improved by allowing more time for lunch and by making the physical surroundings more pleasant.

Efforts must be made to reach youth who are not in school. Youth groups or areas frequented by these youth can be used as points of contact. Nutrition information can be spread to these and other youth via radio and television. It is important, however, to use sophisticated, current, and innovative media techniques to make an impact on youth.

3. How can we *initiate* nutrition programs directed towards youth and how can we *finance* these programs?

Communication among the several agencies that carry nutrition programs to youth is essential to the initiation of youth programs. Existing or newly formed nutrition committees on the local or State level could be the vehicles for communication, coordination, and education of concerned workers. New techniques and materials must become known to all. Nutritionists need to become involved in other organizations and to be included in the policy-making operations of school and health projects.

Better communication is needed not only between various nutrition or health-oriented agencies, but between those agencies and the boards of education in the local and State school systems. It is desirable to have a nutrition counselor or adviser available to the schools.

Nutritionists have a responsibility to keep their congressmen informed of programs and needs related to nutrition. Requests to legislators may be effective in efforts to have nutrition education incorporated into school curriculums.

To determine which nutrition projects to initiate, it is necessary for nutrition committees, or others, to determine local needs and interests and to develop plans and projects. Available resources, professional services, and youth groups need to be identified and included in plans and programs.

The most likely sources for money for long-term nutrition projects are Federal funds and industrial and food firms. Information on Federal programs can be obtained by reading the Nutrition Proceedings in the appendix. Short-term financing can possibly be handled within the community with efforts of nutrition committees in fund raising being most welcome and appropriate.

APPENDIX

Evaluation of the Conference

Evaluation to measure participant satisfaction as well as effectiveness of sessions was provided for during the Conference. Three forms were prepared by the Evaluation Committee for this purpose: one used by members of the Committee during their observations (1), a second used by Committee members during interviews of participants (2), and a third used by individual participants (3). In addition to the evaluation during the Conference, plans were made for followup evaluation later in the year. Forms prepared for this purpose will be mailed to all participants (4).

FORM 1.—*Observations of Participation and Interest*

Evaluation Committee members will share in being responsible for observing participation and interest in the Conference and in physical arrangements. Each session of the Conference is assigned to a Committee member.

Check and add comments:

	Good	*Fair*	*Poor*
A. Attention and interest of participants	______	______	______
B. Questions from the floor	______	______	______
C. Participants remained until end of session	______	______	______
D. Physical arrangements	______	______	______

Comments

To be returned to Committee chairman by member assigned for the particular session at the close of that session.

FORM 2.—*Sampling Evaluation*

Evaluation Committee members will share in securing reactions and observations of the Conference.

Each member will select at random five Conference participants and ask them the following questions sometime during the final day of the Conference:

1. Your position:
2. What is your responsibility for nutrition education of youth?
3. What did you expect to gain from this Conference?
4. Has the Conference met your expectations?______In what ways?
5. If the Conference has *not* met your expectations, why not?

To be returned to Committee chairman at the end of the final day of the Conference.

FORM 3.—*Post-Conference Evaluation*

Please fill in this form throughout the Conference and turn in at the ***end of the last session*** to Dr. Mary Lee Hurt, Chairman of Evaluation Committee.

1. Professional position____________________
2. Place of employment____________ City__________ State______
3. Your responsibility for nutrition education of youth____________
4. Were the Conference objectives achieved in relation to your needs?
   Yes________ No________ Partly________
   Briefly comment on each of the following objectives:

Objectives	Major highlight re: each objective	Further comments
A. Youth today		
(1) Attitudes, values, life styles		
(2) Health		
(3) Eating habits		
B. Youth's environment		
C. Effective ways to work with youth, directly or indirectly to improve their eating habits		

5. How would you rate the choice of type of presentations?

	Excellent	Good	Average	Poor
a. Lecture				
b. Symposium				
c. Youth panel				
d. Examples of programs, actions and techniques in nutrition education				
e. State/regional work session				
f. Highlights/summary of Conference exhibits				
g. Exhibits				

6. How would you rate each day's program based on your interest and value to you in your work?

	Excellent	Good	Average	Poor
Tuesday				
Wednesday				
Thursday				

7. How do you plan to use what you have learned at the Conference?

8. Other comments

We hope this Conference will help you in your future work with youth on nutrition education. The Evaluation Committee is planning a followup evaluation at a later date to find out whether you have been able to carry out the ideas gained at this Conference.

FORM 4.—*Followup Post-Conference Evaluation*
National Nutrition Conference 1971
(Theme: Youth-Nutrition-Community)
(10-month evaluation)

The evaluation committee for the 1971 National Nutrition Conference will appreciate your completing this final evaluation of the above conference held last November in Washington. Please return it before *October 30, 1972.*

1. Name: ______________________________ 2. State: __________

3. Professional position ______________________________

4. Opportunities you have had since the Conference to work with youth on nutrition education:

5. Agencies and types of groups (if any) with which you have worked on nutrition education of youth:

6. New approaches or techniques stimulated by the Conference which you have used in your nutrition education activities:

7. Other comments (use back of page if necessary)

PLEASE RETURN TO: Dr. Mary Lee Hurt
DVTE, BAVTE, ROB 5114
U.S. Office of Education
Washington, D.C. 20202

Nutrition Programs

Each member of the Interagency Committee on Nutrition Education was asked to prepare an account of his agency's nutrition-oriented functions and current programs for the National Nutrition Education Conference. These accounts are:

United States Department of Agriculture

Agricultural Research Service, Consumer and Food Economics Research Division.—The Division is responsible for a national program of basic and applied research designed to improve diets, levels of living, and home management practices of families. The *Family Economics Branch* conducts periodic surveys to determine food, housing, clothing, and other family expenses. The *Food Consumption Branch* surveys food consumption and food management practices of families and individuals and appraises nutritional adequacy of their diets.

The *Food and Diet Appraisal Branch* develops source materials for use in evaluating and improving dietary levels. Its "Food Composition" section is responsible for providing reference values for the nutrient content of foods. The "Interpretation of Research for Applied Programs" section develops dietary guidance materials including the Daily Food Guide. The "Nutrition Program Service" section applies research findings to nutrition education programs and publishes the periodical "Nutrition Program News." The "Consumer Use of Foods" section develops guidelines on food buying, preparation, and preservation.

Address correspondence to:
Dr. Robert L. Rizek, Director

Agriculture Research Service, Human Nutrition Research Division.—Headquarters and most laboratory facilities are located at the Agricultural Research Center, Beltsville, Md. A laboratory for metabolic studies, primarily concerned with mineral nutrition, was recently opened on the campus of the University of North Dakota in Grand Forks.

The goal of the research program is to provide a sound basis for dietary recommendations for normal individuals throughout their lives. The program includes: (1) Establishing criteria for desirable diet patterns and determining which foods meet these needs through the study of human nutritional requirements for carbohydrates, proteins, lipids, vitamins, and minerals; (2) determining the functions and physiological utilization of nutrients in foods; (3) characterizing the forms, properties, biological availability, and nutritional usefulness of the various nutrients as they occur naturally in foods and as they change through processing and preparation; (4) appraising the nutritional state and the response to various nutrients in the diet of selected population groups.

Address correspondence to:
Dr. W. A. Gortner, Director

Cooperative State Research Service (CSRS).—Administers the cooperative experiment station, forestry, and land-grant college funds provided through Federal grants. Interdisciplinary teams of scientists are supported from the Regional Research Fund (RRF) and other sources to accomplish objectives on cooperative projects.

The technical staff of CSRS reviews proposed research and research in progress, gives leadership in planning and coordinating the research, and encourages the establishment and maintenance of cooperation by and between the States and between States and Federal agencies. The automated Current Research Information System (CRIS) serves as an inventory of the more than 20,000 State and Federal agricultural and forestry research projects for planning and coordination needs. CSRS also publishes a quarterly journal, *Agricultural Science Review*, which contains commentary on published research, research in progress, and research trends. A handbook of professional workers in State agricultural experiment stations and other cooperating State institutions is revised and distributed annually, as well as an annual report on the status of funds for research.

Address correspondence to:
Dr. Pauline C. Paul
Assistant to the Administrator for Home Economics

Extension Service, Home Economics, Extension Nutrition.—Extension Service nutritionists cooperate with other Government and private agencies in formulating, planning, and coordinating educational work for food and nutrition programs.

They give leadership to the State Extension services in developing and evaluating nutrition education programs involving professionals, paraprofessionals, and volunteers. They keep State specialists informed of developments in nutrition education through newsletters and field visits.

More than 3,100 Extension home economists and nutrition specialists across the country are providing education to improve the diets of individuals and families. Their priority audiences include those most likely to have poor diets—school children, adolescents, young homemakers, and the elderly.

Special effort is now concentrated on reaching the poor and near-poor through Extension's Expanded Food and Nutrition Education Program. More than 10,000 nutrition program aides are working with adults and youth in this program, in the 50 States, District of Columbia, Puerto Rico, and Virgin Islands.

Extension Service nutritionists consult with specialists in USDA and other Government agencies, professional societies, and business groups on educational trends and developments, and to plan for preparation of educational materials.

Address correspondence to:
Dr. Evelyn Spindler, Nutritionist
Division of Home Economics Programs

Food and Nutrition Service (FNS).—The Agency was established August 8, 1969, to administer the Federal food programs in cooperation with State agencies.

Food Stamp Program: Coupons are provided to supplement the food purchasing power of eligible low-income households, and thus to improve the diets of the people taking part in the program.

Food Distribution Programs: Food is donated to improve the diets of school children and needy persons in households and charitable institutions.

Child Nutrition Programs include:

1. *National School Lunch Program* provides assistance of cash and food to public and nonprofit private schools of high school grade or under operating nonprofit school lunch programs meeting established nutritional standards.
2. *School Breakfast Program* provides cash and food to assist schools in operating nonprofit breakfast programs.
3. *Equipment Program* provides cash assistance to supply schools, especially in low-income areas, with equipment for the storage, preparation, transportation, and service of food to children.
4. *Special Food Service Program* provides cash, food, and equipment assistance to nonprofit service institutions for furnishing nutritious meals to preschool and school-age children on both a year-round and summer day-care basis.
5. *Special Milk Program* provides cash assistance to increase the consumption of fluid milk by children in nonprofit schools of high school grade and under and in other institutions devoted to the care and training of children.

Address correspondence to:
Administrator, Food and Nutrition Service

Economic Research Service (ERS).—The involvement of ERS in dealing with nutrition problems occurs mainly through its Nutrition and Agribusiness Group. This group provides technical services to the Agency for International Development, both in Washington and in its missions abroad, in planning, executing, and evaluating projects aimed at improving nutritional status in developing countries. Through its activities, the Nutrition and Agribusiness Group encourages the application of modern developments in food science and technology to innovative programs of nutrition improvement. It has assisted in planning field trials of amino acid fortification of wheat in Tunisia, rice in Thailand, and corn in Guatemala, and of protein supplementation of cassava in Brazil. It encourages and assists the efforts of U.S. and foreign private industry aimed at developing low-cost protein foods, such as soft drinks, infant weaning foods, textured protein products, and fortified pastas. Major ongoing projects include:

1. Evaluation of consumer acceptability of the blended cereal food CSM (corn-soy-milk) distributed under the Food for Peace Program;
2. Study of overall rural development approaches that include nutrition improvement as an indispensable component;
3. Evaluation of the nutritional impact of the Green Revolution; and
4. Assisting initiatives to further nutrition improvement through cereal breeding or fortification, or both.

Address correspondence to:

Paul R. Crowley
Director, Nutrition and Agribusiness Group

United States Department of Commerce

National Oceanic and Atmospheric Administration, National Marine Fisheries Service.—The National Marine Fisheries Service is engaged in a program, which consists of several phases, to provide basic and applied information on the use of fish and shellfish as food for humans. Included in this research program are studies on methods of processing seafoods into wholesome, nutritious, and acceptable products; studies on the nutrient content and nutritional properties of seafoods; and studies on how seafoods can best be utilized in diets to provide good nutrition and eating enjoyment.

Extensive research is being conducted on the recovery and use of protein from fish. Emphasis has been given to the production and utilization of fish protein concentrate as a high-protein, low-cost supplement for foods. Research is also being conducted on the nutritional properties of most fish, shellfish, and fishery products. Basically, the objective of this work is to develop nutritional information for the consumer on the role of seafoods in nutritionally balanced diets.

Methods of preparing and using seafoods are also receiving attention. Institutional and home recipes have been developed to inform consumers how seafoods can provide eating enjoyment as well as good nutrition. These have been published in colorful and informative booklets that describe how various forms of fish and shellfish can be prepared.

Address correspondence to:

Rose G. Kerr
Research Home Economist

United States Department of Health, Education, and Welfare

Bureau of Head Start and Child Service Programs, Office of Child Development.—Operates Project Head Start, a comprehensive child development program, which meets the total needs of the preschool children it serves; namely, nutritional, medical and dental, educational, psychological, social services, parent participation, and volunteer services. Head Start also funds 33 Parent and Child Center programs for families having at least one child under 3 years of age.

The Project Head Start Nutrition Kit contains seven nutrition publications designed to serve as guidelines and provide information supporting each facet of the Head Start Nutrition and Food Program. Currently 415,800 children—4, 5, and 6 years of age—are enrolled in full year all-day or half-day programs, or both, and in summer programs.

Head Start is part of the new OFFICE OF CHILD DEVELOPMENT (OCD) which, in 1969, was the most recent addition to the Department of Health, Education, and Welfare (HEW). The director, Dr. Edward Zigler, reports directly to the Secretary of HEW.

Under the authorizing legislation of the Children's Bureau, an OCD division, the agency investigates and reports "upon all matters pertaining to the welfare of children and child life among all classes of our people." [1]

Address correspondence to:

Sue Sadow
Senior Nutrition Specialist

Office of Education, Bureau of Adult, Vocational, and Technical Education, Division of Vocational and Technical Education, Home Economics Education Unit.—National leadership is provided to home economics education personnel in State departments of education and teacher education institutions to develop nutrition education programs as a part of consumer and homemaking education programs offered to approximately 2½ million secondary, postsecondary, and adult students under the auspices of the public schools. The study of food and nutrition is included as an integral part of the curriculum which prepares for the responsibilities of homemaking, and specialized courses are offered to those interested in nutrition for the individual or family, or both. Included in the courses are the study of the significance of food as related to nutrition and ological influences on eating habits; principles good health; cultural, psychological, and physi- of consumer economics as applied to selecting food in the market place; management, including planning, preparing, and serving food for families with differing needs, styles of life, and resources available. All instructional programs are adapted to the needs of the students enrolled with particular attention being given to reaching individuals and families in depressed rural and inner-city areas.

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[1] 1912 legislation.

Address correspondence to:

Dr. Mary Lee Hurt
Education Programs Specialist

Office of Education, Office for Nutrition and Health Services.—The Office of Education this year initiated a program of Demonstration Projects in School Health and Nutrition Services for Children from Low-Income Families.

The purpose of the program is to demonstrate a variety of ways through which the gap between needs and delivery of nutrition and health services can be narrowed by coordinating, focusing, and utilizing existing health, health related and educational resources at the local level, especially federally funded programs. Thus, nutrition services, provided mainly through USDA child nutrition programs, and nutrition education and training are components of the demonstration projects. The eight grantees which received funds for this school year are local education agencies in New York City; Norfolk, Va.; Durham, N.C.; Beaufort, S.C.; Galveston, Texas; Topeka, Kans.; Dayton, Ohio, and Oakland, Calif.

Each demonstration effort reaches up to 1,500 children in two to four elementary schools. It is expected that over the next 5 years the program will support a total of 20 projects for up to 3 years each.

Address correspondence to:

Administrator

Public Health Service, Food and Drug Administration (FDA).—Enforces Federal laws requiring that foods are safe, pure, and wholesome and are honestly and informatively labeled and packaged. Examples of current programs in foods and nutrition:

1. *Nutrition Labeling*—Three methods of expressing nutritional quality of foods on the label are being tested in several cities as part of a program to help consumers select nutritious diets. (See Federal Register, vol. 36, No. 224, Nov. 19, 1971.)

2. *Nutritional Guidelines*—Nutritional quality standards are being developed for processed foods. The first in a series of guidelines has been published as a proposal for precooked frozen convenience "heat and serve" dinners. (See Federal Register, vol. 36, No. 247, Dec. 23, 1971.) The next proposal for main dish products will be published in early 1972.

3. *Proposed Improvement of Nutrient Levels of Enriched Foods*—In an effort to alleviate recognized existence of widespread iron deficiency anemia in the United States, it has been proposed that iron enrichment levels in bread and flour be significantly increased. Amounts of the nutrients, calcium, thiamin, riboflavin, and niacin presently provided for would also be changed to make it easier to prepare enriched bread and significantly fortified nonstandardized bakery products from enriched flour alone. The new enrichment levels for flour would also apply to farina. (See Federal Register, vol. 36, Dec. 3, 1971.) The period for comments regarding this proposal was extended until May 1, 1972.

Address correspondence to:

Donald F. Miller, Acting Chief
Food and Nutrition Composition Section

Public Health Service, Health Services and Mental Health Administration, Center for Disease Control, Nutrition Program.—The purpose of the Nutrition Program is to identify nutritional problems as they relate to human health and to promote, develop, and educate corrective and preventive programs. The focus of current programs is on projects designed to assess and improve nutritional status as well as provide methods for implementation of fundings.

Long-range objectives include: (1) The development of an intelligence system to identify and monitor nutritional needs of high-risk groups; (2) the establishment of an information exchange to prepare and disseminate selected technical reviews and bibliographical information; (3) the development of nutrition manpower, for example, through continuing education; and (4) the establishment of guidelines and standards relating to nutritional health.

Address correspondence to:
Gretchen E. Collins
Chief, Field Operations Branch

Public Health Service, Health Services and Mental Health Administration, the Community Health Service.—Promotion of nutrition services in comprehensive health care in hospitals, nursing homes, and home health agencies is an ongoing effort of CHS. We have recently revised "A Guide to Nutrition in Nursing Homes and Homes for the Aged." The new edition is available for sale by the Superintendent of Documents, GPO, Washington, D.C. 20402. Price $1.75.

Other components of CHS administer a variety of grant programs which seek to improve health care for certain disadvantaged population groups. Examples of operating or potential nutrition services under these programs follow:

Diet counseling services to patients and their families are provided by dietitians or nutritionists, or both, in many of the comprehensive health centers supported by CHS.

Several demonstration projects are exploring a variety of approaches to nutrition services that are responsive to problems of poor families of Appalachia.

New guidelines for projects for health services for agricultural migrants deal with provision of nutrition education services to agricultural migratory workers and their families.

Address correspondence to:
Charlotte E. Smith
Nutrition Consultant

Public Health Service, Health Services and Mental Health Administration, Indian Health Service.—Responsibility for the health needs of the American Indian and the Alaska Native, the first Americans, has given the Indian Health Service the unique opportunity of planning and implementing one of the most comprehensive community health care programs in this country. About 465,000 Indians, Eskimos and Aleuts receive a full range of curative, preventive, and rehabilitative health services, including hospitalization.

The Nutrition and Dietetics Branch of the Indian Health Service coordinates in one program its responsibilities for:

1. Extensive preventive community nutrition services for Indians, Eskimos and Aleuts, and
2. Administration of the dietary departments (including staff consultation and inservice training and patient education) in the 51 Indian Health Service hospitals for this population. The Nutrition and Dietetics Branch also conducts two year-long training programs for Indians and Alaska Natives: one for food service supervisors and the other for nutrition technicians.

Indian Health Service nutritionists, dietitians, trained nutrition technicians, and trained food service supervisors work as members of the total health team in combatting the high incidence of malnutrition and nutrition-related health problems in the Indian and Alaska native population.

Address correspondence to:
Helen Ger Olson
Chief, Nutrition & Dietetics Branch

Public Health Service, Health Services and Mental Health Administration, Maternal and Child Health Service.—A large proportion of the approximate 1,000 nutritionists and dietitians delivering nutritional care in State and local health agencies and projects are being supported by Maternal and Child Health Services funds.

This support is part of a four-pronged nutritional effort underway by the MATERNAL AND CHILD HEALTH SERVICE (Health Services and Mental Health Administration) in carrying out its basic role of promoting the health of mothers and children. This role relies on the premise that nutritional care is an integral component of health services for mothers and children and for families.

Here are the four areas in which Maternal and Child Health Service nutrition efforts are most pronounced:

1. Providing technical assistance to Federal, State, and local health agencies, other public agencies, and professional and voluntary organizations.
2. Fact finding and support of research to determine nutritional needs, problems, and approaches to delivery of services.
3. Developing standards and guidelines to maintain high quality of care in such settings as comprehensive health programs, group care facilities such as day care, hospitals, and residential settings.
4. Developing and supporting graduate training in public health and maternal and child nutrition as well as furthering training opportunities for nutrition personnel and other disciplines involved in the delivery of maternal and child health services.

Address correspondence to:
Mary C. Egan, Chief, Nutrition Section

Health Services and Mental Health Administration, National Center for Health Statistics, Division of Health Examination Statistics.—Conducts health examinations to obtain data from probability samples of the Nation's civilian, noninstitutional population, by using mobile clinics with teams of doctors, dentists, nurses, dietary interviewers, and other technical staff. Analyzes and interprets data on prevalence of selected objectively defined illnesses and provides data related to health and nutrition; conducts research on the quality and reliability of the data and on the methodology and techniques used.

The current Health and Nutrition Examination Survey (HANES) began in April 1971. During a 2-year period, 30,000 persons will be selected for examination to measure the nutritional status of the U.S. population between the ages of 1 and 74 and to obtain further information on the health status and medical care needs of those between 25 and 74.

Address correspondence to:
Dorothy M. Youland, Nutrition Consultant

Public Health Service, Health Services and Mental Health Administration, National Institutes of Health, National Institute of Arthritis and Metabolic Diseases.—One of the National Institutes of Health has major interest in basic research and clinical studies in collagen diseases including rheumatoid arthritis, dermatology, diabetes, endocrinology, gastroenterology, hematology, metabolism and metabolic diseases, nutrition, orthopedics, and urology, including renal disease. NIAMD responsibilities can be described as encompassing investigation of the etiology, pathogenesis, diagnosis, and treatment of specific diseases within these areas of whatever time period of life they may occur. The total program of research support necessarily includes studies of a very fundamental nature.

The overall mission of the National Institutes of Health is the advancement of the health and well-being of the American people. To this mission, the National Institutes of Health administers through its three major component parts—(1) the Research Institutes; (2) the Bureau of Health Professions Education and Manpower Training; and (3) the National Library of Medicine—a broad spectrum of grant programs including research project grants, training grants, fellowships, research career program awards, general research support grants, special research resource grants, construction grants, and scholarships and loans to students to enable them to undertake health service careers. The National Institutes of Health also offers support for symposia, workshops, and other meetings to aid in the dissemination of information of benefit to medical scientists and practitioners.

Address correspondence to:
Administrator

Social and Rehabilitation Service.—Enables America's vulnerable and handicapped people—those physically and mentally disabled, the aging, children and youth, and impoverished families—to move from dependency, alienation, and deprivation toward independence, constructive contributions to society, and realization of their individual potentials.

In partnership with State and local governments and private groups, SRS sponsors a comprehensive program of social services, including income and medical support, rehabilitation, job referral, delinquency prevention, child care, and other supportive services for individuals and families who need and qualify for assistance.

The mission of SRS has its foundation on legislation enacted by the Congress. SRS programs are authorized by the Social Security Act, the Vocational Rehabilitation Act, the Older Americans Act, the Juvenile Delinquency Prevention and Control Act, the Refugee and Migration Assistance Act, the Architectural Barriers to the Handicapped Act, the Mental Retardation Facilities Construction Act and (also in the field of mental retardation) the Public Health Service Act.

Address correspondence to:
Gertrude Lotwin, Chief
Assistance Standards Branch

Department of State

Agency for International Development.—AID carries out U.S. programs of economic and technical assistance to less developed countries designed to bring countries to a level of self-sufficiency.

The Office of Nutrition, Technical Assistance.—Provides intellectual leadership and technical advice to the other elements of the Agency for International Development in the conduct of Nutrition program activities in the developing countries.

It works with the regional bureaus, the Missions and other AID offices, and with outside entities with the objective of the alleviation of malnutrition in the developing countries.

The key problem areas on which concentrated attention is given by the Office of Nutrition are:

1. Nonavailability of highly nutritious food products at low cost to consumers,
2. Difficulty of reaching the preschool child, particularly in nonurban areas,
3. Lack of motivation by the power structure and by the consumer

Address correspondence to:
H. C. Ladenheim
Deputy Director

The American National Red Cross

The American National Red Cross.—In accordance with its Federal Charter and its obligation to the people, the American Red Cross (1) is committed to the delivery of essential services to ill and able-bodied members of the armed forces, veterans, and their families, including emergency communications, counseling and necessary financial assistance regardless of cause; (2) is committed to the maintenance of a nationwide system of emergency preparedness and collaboration with Government and other agencies to deliver emergency and recovery assistance to victims of disasters wherever they occur; (3) is committed to actively participate in the international family of the Red Cross by cooperating in disaster relief and the fostering of humanitarian principles and action; (4) is committed to the furtherance of the democratic principle of voluntary action to meet human needs; and (5) is committed to the expansion of local and national health, educational, and youth activities to support not only the foregoing services, but also to provide for opportunity to meet the changing needs of people for services within the scope of the Red Cross mission.

Address correspondence to:
Margaret C. Dean
Food and Nutrition Consultant

The Pan American Health Organization

The Pan American Health Organization, Pan American Sanitary Bureau.—The Organization has among its many responsibilities that of assisting its 26 member governments in the improvement of the nutritional status of their people. It assigns medical nutritionists, public health nutritionists, and dietitians as advisers to national counterparts in the Ministries of Health for the development or strengthening of their nutrition programs and activities.

Advisory services are also given to the 23 Latin American universities developing 4-year degree programs preparing nutritionists-dietitians to work in integrated health services (preventive and medical care) and to Medical Schools and Schools of Public Health for the purpose of strengthening the nutrition content of these curricula. Research activities are promoted and coordinated in such areas as protein-calorie malnutrition, nutritional anemias, nutrition and mental development, development of high protein vegetable mixtures, economical and effective measures to prevent endemic goiter, and severe vitamin A deficiencies. There are two Nutrition Institutes attached to the Organization: the Institute of Nutrition of Central America and Panama in Guatemala and the Caribbean Food and Nutrition Institute in Jamaica and Trinidad.

Address correspondence to:
Dr. Bertlyn Bosley
Nutrition Adviser

Action

Action.—is the new citizen service corps which brought together a number of Federal volunteer programs. These include the Peace Corps, Volunteers in Service to America (VISTA), Foster Grandparents, Service Corps of Retired Executives and the Active Corps of Executives (SCORE/ACE), the Retired Senior Volunteer program (RSVP), and the University Year for ACTION (UYA). ACTION, which began operations July 1, 1971, provides a central mechanism for the recruiting, training, and assigning of the full-time volunteers in Peace Corps, VISTA, UYA, and for coordinating the part-time volunteers in other programs.

Peace Corps, which celebrated its 10th anniversary last year, is the oldest and largest component of ACTION. There are now about 8,000 Peace Corps volunteers in 55 developing countries. Many volunteers are skilled and experienced, reflecting the "New Directions" policy of responding to the changing needs of host countries. VISTA has approximately 4,000 volunteers working to help alleviate poverty within the United States. Foster Grandparents work part-time with children, many of them from institutions, to provide them with the affection and attention they desperately need. SCORE/ACE volunteers advise small businessmen on management problems. RSVP has plans to enlist large numbers of volunteers in putting their experience and knowledge and energy to work on community problems. UYA volunteers work full-time in antipoverty projects while gaining academic credit from the sponsoring college or university.

Address correspondence to:
Joe Blatchford, Director

A Selected List of Available Publications—Teaching and Reference

Each member of the Interagency Committee on Nutrition Education and Conference speakers were asked to submit a list of their materials pertaining to the theme of this Conference. These materials are:

U.S. DEPARTMENT OF AGRICULTURE

Agriculture Research Service

- Consumer and Food Economics Research Division, Federal Center Building, Hyattsville, Md. 20782
  - CONSUMER AND FOOD ECONOMICS RESEARCH DIVISION ORGANIZATION AND PROGRAM. Rev. 1971.[1]
  - G–153. CALORIES AND WEIGHT. THE USDA POCKET GUIDE. Rev. 1970.[1] Price 25 cents per copy.[2]
  - L–424. FOOD FOR FITNESS. A DAILY FOOD GUIDE. Slightly rev. 1967.[1] Price: 5 cents per copy or $3.75 per 100.[2]
- Human Nutrition Research Division, Agricultural Research Center, Beltsville, Md. 20705
  - HUMAN NUTRITION RESEARCH DIVISION ORGANIZATION AND PROGRAM. 1971.[1]

Cooperative State Research Service, Washington, D.C. 20250

SOURCES OF INFORMATION ON CURRENT PROJECTS ON RESEARCH. 1971.[1]

See footnotes on p. 101.

U.S. DEPARTMENT OF AGRICULTURE—Continued

Extension Service

FOODS WITH AN INTERNATIONAL FLAVOR. Price: 13 cents per copy for Leader's Guide; 25 cents per copy for Member's Guide. National Committee, 59 East Van Buren Street, Chicago, Ill. 60605.

Slides: HOW FOOD AFFECTS YOU? Price $8.00 per set. Photography Division, Office of Information, U.S. Department of Agriculture, Washington, D.C. 20250. Also available in Flip Chart. Price: 60 cents.[2]

Phono-viewer record: GOOD FOOD WORKS FOR YOU. Price: $4.00. Double Sixteen Company, 1028 College Avenue, Wheaton, Ill. 60187.

Food and Nutrition Service, Washington, D.C. 20250

- Nutrition and Technical Services Staff

  PA-948. CHILD NUTRITION PROGRAMS. Revised Mar 1971.[1]

  PA-912. GOOD FOODS COLORING BOOK.[1] Price: 20 cents per copy, 25 percent discount on 100 or more copies. April 1968.[2]

  C-181. SCHOOL LUNCH BUNCH—NUTRITION IN TODAY'S SCHOOLS. 1971. Filmstrip: Price $5.50 from Photo Lab, Inc., 3825 Georgia Ave., N.W., Washington, D.C. 20011. Slides. Price $11.00. Photography Division, Office of Information, U.S. Department of Agriculture, Washington, D.C. 20250.

- Child Nutrition Division

  PA-19. NATIONAL SCHOOL LUNCH PROGRAM. Revised July 1971.[1]

  4 School Lunch Posters: SCHOOL LUNCH MAKES THE DIFFERENCE, TWO HAPPY FACES, WHAT'S GOING AROUND, WHAT'S SO GREAT ABOUT SCHOOL LUNCH? 1971.[1]

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education

- Division of Vocational and Technical Education

  A RESOURCE HANDBOOK FOR TEACHING NUTRITION IN THE ELEMENTARY SCHOOL. 1970. Price $1.00 per copy. Georgia Department of Education, Vocational Education Division, Atlanta, Ga. 30334.

  FOOD AND NUTRITION, A GUIDE FOR HOME ECONOMICS TEACHERS. 1970. Price: Not given. State Department of Education, Division of Vocational Tech. and Adult Education, Home Economics Education, Little Rock, Ark. 72201.

  CONSUMER EDUCATION, PART ONE, A CURRICULUM GUIDE. 1971. Price: $6.50 per day. Home Economics Instructional Materials Center, Texas Tech. University, P.O. Box 4067, Lubbock, Tex. 79409.

Public Health Service

- Food and Drug Administration

  Office of Consumer Affairs, 5600 Fishers Lane, Rockville, Md. 20852

  Fact Sheet, NUTRITION NONSENSE AND SENSE.[1]

  Fact Sheet, COSMETICS.[1]

  Booklet, FIRST FACTS ABOUT DRUGS.[1] Price: 15 cents.[2]

- Health Services and Mental Health Administration, Maternal and Child Health Service

  PHS-2114. MATERNAL NUTRITION AND THE COURSE OF PREGNANCY SUMMARY REPORT. Price: 25 cents per copy.[2]

  SCREENING CHILDREN FOR NUTRITIONAL STATUS: SUGGESTIONS FOR CHILD HEALTH PROGRAMS. Price: 40 cents per copy.[2]

  National Center for Health Statistics, 5600 Fishers Lane, Rockville, Md. 20852.

  PHS-2121. THE HEALTH OF CHILDREN—1970. SELECTED DATA FROM THE NATIONAL CENTER FOR HEALTH STATISTICS. 1970.[1] Price: 50 cents per copy.[2]

AMERICAN NATIONAL RED CROSS, 17th and E Streets, N.W., Washington, D.C. 20006

ARC-1473. RED CROSS YOUTH, HEALTH AND SAFETY CHARTS. 1970.[1]

ARC-616. YOUTH HAS A LOT TO GIVE.[1]

American Red Cross Youth News, THE FANTASTIC FOUR: BASIC FOODS FOR GOOD NUTRITION. 1971.[1]

ACTION (PEACE CORPS/VISTA), 1711 H Street, N.W., Washington, D.C. 20525

Brochure, HOME ECONOMIST-DIETITIAN-NUTRITIONIST IN THE PEACE CORPS.[1] Also available in quantity.

See footnotes on p. 101.

See footnotes on p. 101.

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Reprint from Journal of Home Economics 62:9, Nov. 1971. A PEACE CORPS CHALLENGE.[1] Also available in quantity.

The Fact Book, PEACE CORPS '71. BECOMING A VOLUNTEER. Also available in quantity.

GEORGIA NUTRITION COUNCIL

A RESOURCE HANDBOOK FOR TEACHING NUTRITION IN THE ELEMENTARY SCHOOL. Price: $1.00 per copy. School Food Service, Georgia Department of Education, 156 Trinity Avenue, Annex Room 211, Atlanta, Ga. 30303.

ORGANIZING TEENAGE NUTRITION COUNCILS.[1,3]

FOOD COUNCIL OF AMERICA,
1750 Pennsylvania Ave., N.W., Washington, D.C. 20006

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[3] Order from the same address as listed for the previous publication.

Compiled by the Subcommittee on Exhibits for the National Nutrition Education Conference.

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[1] Compiled by the Bibliography Subcommittee for the National Nutrition Education Conference, 1971.

Conference Speakers, Leaders, Committees, and Participants

Conference Speakers

Daniel A. Alfieri, director of public affairs, Grocery Manufacturers of America, Washington, D.C.

Ned D. Bayley, Ph.D., director, science and education, U.S. Department of Agriculture

John T. Broaddus, Jr., principal, George C. Marshall High School, Fairfax County Public Schools

Leanne E. Cupp, 1970–71 vice president, North Atlantic Region, Future Homemakers of America, Suffern, N.Y.

Frances W. Dobbins, nutrition coordinator, School Lunch Section, State Department of Education, Oklahoma City, Okla.

Juanita A. Eagles, Ed.D., chairman, Conference Program Committee, Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture

Felix P. Heald, M.D., professor, Department of Pediatrics, and head, Division of Adolescent Medicine, School of Medicine, University of Maryland

Ruth L. Huenemann, D.Sc., professor, Public Health Nutrition, School of Public Health, University of California, Berkeley

Mrs. J. Bernard Joy, Washington, D.C.

Ruth M. Leverton, Ph.D., science adviser, Agricultural Research Service, U.S. Department of Agriculture

Mary W. Marshall, chairman, Interagency Committee on Nutrition Education; research nutritionist, Human Nutrition Research Division, Agricultural Research Service, U.S. Department of Agriculture

James P. McFarland, chairman of the board, General Mills, Inc., Minneapolis, Minn.

Karen Morgan, Buford, Ga.

William W. Reeder, Ph.D., professor of rural sociology, Cornell University

Catherine V. Richards, D.S.W., chief, Youth Services, Office of Child Development, U.S. Department of Health, Education, and Welfare.

Ann M. Rowland, former chief nutritionist, Children and Youth Project, University of Alabama Medical Center, Birmingham, Ala.

Elena M. Sliepcevich, D.P.E., director, School Health Education Study, Washington, D.C.

Milan D. Smith, chairman, Food Council of America, Washington, D.C.

Hazel Taylor Spitze, Ed.D., associate professor, Home Economics Education, University of Illinois

Isabelle Valadian, M.D., associate professor, Maternal and Child Health, School of Public Health, Harvard University

Marjorie C. Zukel, chairman, Conference Coordinating Committee; fellowships officer, National Institute of Arthritis and Metabolic Disease, National Institutes of Health, U.S. Department of Health, Education, and Welfare

Conference Leaders

Presiding Officers

Mary M. Hill, Ed.D., nutrition analyst, Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture

Mary B. McCann, M.D., acting deputy director, Nutrition Program, Center for Disease Control, U.S. Department of Health, Education, and Welfare

Helen Ger Olson, chief, Nutrition and Dietetics Branch, Indian Health Service, U.S. Department of Health, Education, and Welfare

Margaret G. Phillips, Ed.D., therapeutic nutrition consultant, Maternal and Child Health Service, U.S. Department of Health, Education, and Welfare

Robert L. Rizek, Ph.D., director, Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture

Evelyn B. Spindler, Ph.D., nutritionist, Division of Home Economics, Extension Service, U.S. Department of Agriculture

Symposium and Panel Leaders

Margaret C. Dean, food and nutrition consultant, American National Red Cross

Mary Lee Hurt, Ed.D., education program specialist, Division of Vocational and Technical Education, Office of Education, U.S. Department of Health, Education, and Welfare

Wililam W. Reeder, Ph.D., professor of rural sociology, Cornell University

Mildred Reel, national adviser, Future Homemakers of America

Discussion Group Leaders

Cleo Arnett
Fannie Lee Boyd
R. La Jeune Bradford
Myrtle L. Brown
Susan Christopherson
Jeanne Clark
Emma Clinkscales
F. Aline Coffey
Catherine Cowell
Theresa A. Demus
Nancye B. Devier
Gail W. Disney
Marjorie M. Donnelly
Lois B. Earl
Margaret A. Eppright
Viola Fisher
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Helen A. Guthrie
Frances A. Heymans
Marilyn A. Jarvis-Eckert
Helen M. Lackey
Pauline Mairs
Margaret Mangel
M. Constance McCarthy
Barbara S. McDonald
Rose Mirenda
Nancy Munro
Mary Murai
Mary Niedermeier
Julia B. Parker
Orrea F. Pye
Frances W. Rudd
Ellen H. Semrow
Edna Sostman
Edna B. Southmayd
Margaret R. Stewart

Members of Youth Reactor Panels

Donita Anderson
Deborah Ann Blodgett
Richard McPayten
Clifford Nash
April Foster
Angela Mack
Theresa Martin
Douglas Skinner
Joel Stern

Conference Committees[1]

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Members: Juanita Eagles
Mabel Walker
Margaret Dean
Mary Lee Hurt
Hazel Hildebrand[2]
Ex officio: Mary Hill[2]

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Members: Mary Egan
Arthur Holmaas
Gertrude Lotwin
Margaret Powers
Andromache Sismanidis
Helen Souders
Evelyn Spindler
Ex officio: Margaret Dean
Mary Lee Hurt

Program Committee—Subcommittee on Bibliography
Chairman: Juanita Eagles
Members: Anita Lincoln
Frances Shoun
Margaret Stewart
Patricia Thomas

Program Committee—Subcommittee on Exhibits
Chairman: Theresa Demus
Members: Juanita Eagles
Alice Stewart
Margaret Stewart
Patricia Thomas

COMMITTEE ON SELECTION OF PARTICIPANTS

Chairman: Mabel Walker
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Charlotte Smith
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ADMINISTRATIVE SERVICES COMMITTEE

Chairman: Hazel Hildebrand
Members: Marilyn Farrand
Sarah Rothchild
Alice Stewart

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Chairman: Margaret Dean
Members: Helen Ger Olson
Elaine Rondeau
Dorothy Youland

EVALUATION AND FOLLOWUP COMMITTEE

Chairman: Mary Lee Hurt
Members: Evelyn Johnson
Mary Marshall
Donald Miller
Gladys Royal
Bruce Stillings

---

[1] The Committee wishes to express its thanks to Audrey T. Driskill, secretary, for her valuable contribution to the Conference.

[2] Mary Hill and Hazel Hildebrand served as ex officio members of all committees.

Participants in the Conference[1]

ALABAMA

Clinkscales, Emma. Director, Nutrition Service, Alabama Department of Public Health, Montgomery 36101

Davis, Elizabeth Y. Department of Nutrition and Foods, Auburn University, Auburn 36830

Emory, Melissa. Food Service Supervisor, State Department of Education, 455 State Office Building, Montgomery 36104

Jones, Elizabeth W. P.O. Box 136, Shawmut 36876

Schultz, Della S. Maternity and Infant Care Project, 802 South Wilson Avenue, Prichard 36610

Stitt, Kathleen. Box 3344, University of Alabama, University 35486

---

[1] Participants from Federal Government Organizations are listed on p. 113.

ALASKA

Brown, Larry K. Box 469 SRA, Anchorage 99502

McDonald, Barbara S. Area Chief, Nutrition and Dietetics Branch, Alaska Area Native Health Service, P.O. Box 7-741, Anchorage 99510

ARIZONA

Bayles, Ray M. COC Nutrition Representative, Papago Tribe of Arizona, Sells 85634

Noe, Lettie B. Division of Vocational Education, 1333 West Camelback Road, Phoenix 85013

Putnam, Peggy H. Extension Nutritionist, School of Home Economics, University of Arizona, Tucson 85721

Roseleigh, Patricia. Area Chief, Nutrition and Dietetics Branch, Navajo Area Indian Health Service, P.O Box G, Window Rock 86515

ARKANSAS

Cox, Evelyn M. University of Arkansas, Fayetteville 72701

Lambert, Ocrie M. Nutritionist, MCH Division, Arkansas State Department of Health, Little Rock 72201

McLeod, Ernestine A. State Education Department, Room 403-E, State Education Building, Little Rock 72201

Phillips, Marjorie M. Extension Nutrition Specialist, P.O. Box 391, Little Rock 72203

Rudd, Frances W. Supervisor, Home Economics Education, Department of Education, Little Rock 72201

CALIFORNIA

Blue, Josephine C. Food and Nutrition Service, U.S. Department of Agriculture, 630 Sansome St., Rm. 734, San Francisco 94111

Cruz, Adeline. 6605 Green Valley Circle, Apt. 209, Culver City 90230

Deasy, Marilyn. 1625 Vanness Ave., American Red Cross, Golden Gate Chapter, San Francisco 94109

Emerson, Gladys A. School of Public Health, Health Sciences Center, UCLA, Los Angeles 90024

Hall, Mary E. Morgan Hall, Rm. 325, University of California, Berkeley 94720

Huenemann, Ruth, Professor of Public Health Nutrition, School of Public Health, University of California, Berkeley 94720 (Speaker)

Khalil, Suzanne. Food and Nutrition Service, U.S. Department of Agriculture, 630 Sansome St., Rm. 734, San Francisco 94111

Lieberman, Harry M. 733 The Alameda, Berkeley 94707

McGovern, Patricia. E.O.C., 861 6th Ave., San Diego 92101

Murai, Mary. School of Public Health, University of California, Berkeley 94720

Southmayd, Edna B. 5529 Santa Monica Boulevard, Los Angeles 90038

Ullrich, Helen D. Editor, Journal of Nutrition Education, University of California, Berkeley 94720

COLORADO

Benton, Margaret H. 601 S. Corona St., Denver 80209 (State Department of Education)

Bradford, R. La Jeune. Regional Nutrition Consultant, Maternal and Child Health Service, HSMHA, Rm. 9017, Federal Building, 1961 Stout St., Denver 80202

Frolich, Louise A. K. American School Food Service Association, 41010 E. Iliff, Denver 80222

Mikesell, Ronald S. 1693 Iola St., Aurora 80010 (Colorado State Department of Social Services)

Patrick, Reba. 13598 W. Mississippi Ct., Denver 80228

CONNECTICUT

Czajkowski, Janina M. University of Connecticut Extension, Department of Nutritional Sciences U-17, Storrs 06268

DELAWARE

Krackhardt, Marguerite E. Agricultural Hall Rm. 125, University of Delaware, Newark 19711

Rasmussen, Arlette I. College of Home Economics, University of Delaware, Newark 19711

Zickefoose, Mayton. Nutrition Consultant, Division of Physical Health, Federal and D Sts., Dover 19901

DISTRICT OF COLUMBIA

Alfieri, Daniel A. Grocery Manufacturers of America, 1425 K St., N.W., Washington 20005 (Speaker)

Anderson, Donita. 151 Ivanhoe St., S.W., Washington 20032 (Youth Panel)

Ballestro, Hilda. Evaporated Milk Association, 910 Seventeenth St., N.W., Washington 20006

Brooks, Mildred J. Home Economics Consultant, DHR, Social Services Administration, 122 C St., N.W., Rm. 809, Washington 20001

Campbell, Lee. Vice President, Poultry and Egg Institute of America, 425 13th St., N.W., Washington 20004

Chapman, Erna R. Supervisor, Home Economics Education, The Presidential Building, Suite 1103, 415 12th St., N.W., Washington 20004

Clarke, Jeanne. Dairy Council of Greater Metropolitan Washington, D.C., 1511 K St., N.W., Washington 20005

Cooper, John H. American Association for Health, Physical Education, and Recreation, 1201 Sixteenth St., N.W., Washington 20036

Corey, Fred P. Director of Education and Public Relations, International Apple Institute, 2430 Pennsylvania Ave., N.W., Washington 20037

Edwards, Cecile H. 3910 44th St., N.W., Washington 20016

Fitzgerald, Ellen M. American Home Economics Association, 2010 Massachusetts Ave., N.W., Washington 20036

Foster, April. 5740 13th St., N.W., Washington 20011 (Youth Panel)

Goodrich, W. W. President, Institute of Shortening and Edible Oils, Incorporated, 888 Sixteenth St., N.W., Washington 20006

DISTRICT OF COLUMBIA—Continued

Greenwell, Wayne K. National Soybean Processors Association, Suite 314, 1225 Connecticut Ave., N.W., Washington 20036

Hansen, Gloria W. Director, Home Economics-Consumer Services, National Canners Association, 1133 20th St., N.W., Washington 20036

Joy, James Bernard, Mrs. 3224 Sherman Ave., N.W., Washington 20010 (Speaker)

Lewis, Joan B. Nutritionist, National Medical Association Foundation, Incorporated, 1424 Sixteenth St., N.W., 4th Floor, Washington 20036

Mack, Angela. 3096 Stanton Road, S.E., Washington 20020 (Youth Panel)

Martin, Theresa. 1314 Floral St., N.W., Washington 20012 (Youth Panel)

Mattis, Joyce A. Corn Refiners Association, Inc., 1001 Connecticut Ave., N.W., Washington 20036

McPayten, Richard. 2523 3rd St., N.E., Washington 20002 (Youth Panel)

Reel, Mildred. National Adviser, Future Homemakers of America, 2010 Massachusetts Avenue, N.W., Washington 20036 (Speaker)

Richards, Catharine V. Chief, Youth Services Division, Office of Child Development, U.S. Department of Health, Education, and Welfare, Box 1182, Washington 20013 (Speaker)

Skinner, Douglas. 6319 Utah Avenue, N.W., Washington 20015 (Youth Panel)

Sliepcevich, Elena. 1507 M Street, N.W., Room 800, Washington 20005 (Speaker)

Smith, Milan D. Executive Vice President, National Canners Association, 1133 20th Street, N.W., Washington 20036 (Speaker)

Stern, Joel. 5536 32nd Street, N.W., Washington 20015 (Youth Panel)

Weitzman, Stephen A. Food and Drug Law Institute, 1750 Pennsylvania Avenue, N.W., Washington 20006

Wells, George T. National Soft Drink Association, 1101 16th Street, N.W., Washington 20036

Zoeller, Laurence W. Food Council of America, 1750 Pennsylvania Avenue, N.W., Washington 20006

FLORIDA

Engle, Althea R. Food and Nutrition Specialist, 3033 McCarty Hall, Unit D, University of Florida, Gainesville 32601

Kendrick, Jean. Florida Department of Education, Food and Nutrition Services, Room 244, Pepper Building, Tallahassee 32304

Laster, Osceola. 5738 Abelia Road, Jacksonville 32209

Phillips, Levina S. Nutrition Consultant, Dade County Department of Public Health, Miami 33125

Schoonmaker, Ethel P. 1230 North Lake Sybelia Drive, Maitland 32751 (Florida Health Department)

GEORGIA

Boyd, Fannie Lee. 604 Aderhold Hall, University of Georgia, Athens 30601

GEORGIA—Continued

Ellis, Ann L. 211 Education Annex, School Food Service, 158 Trinity Avenue, S.W., Atlanta 30303

Hornbackle, Betty Wills. 2403 Brandy Turk Way, N.E., Atlanta 30340

Johnson, Martha R. 135 Georgetown Drive, Athens 30601 (University of Georgia)

Miller, Polly F. Food and Nutrition Service, U.S. Department of Agriculture, 1795 Peachtree Road, N.E., Atlanta 30309

Morgan, Karen. 4794 Cambridge Drive, Dunwoody 30338 (Speaker)

Nash, Clifford. Route 1, Barnesville 30204 (Youth Panel)

Pratt, Eleanor. Home Economist, Food and Nutrition Service, U.S. Department of Agriculture, 1795 Peachtree Road, N.E., Room 302, Atlanta 30309

IDAHO

Wilson, Esther H. Extension Nutrition Specialist, College of Agriculture, University of Idaho, Moscow 83843

ILLINOIS

Anderson, R. F. Executive Director, National Cheese Institute, Inc., 110 N. Franklin Street, Chicago 60606

Caldwell, H. Mariel. Regional Nutrition Consultant, Maternal and Child Health Service, U.S. Department of Health, Education, and Welfare, 433 W. Van Buren Street, Chicago 60607

Collins, Lenora W. Home Economics Consultant, Cook County Department of Public Aid, 318 West Adams Street, Chicago 60606

Garrett, Beatrice. 8343 South Indiana Avenue, Chicago 60619

Gustafson, Marguerite. American Dairy Association, 20 North Wacker Drive, Chicago 60606

Hall, Frances. National Live Stock and Meat Board, 36 South Wabash Avenue, Chicago 60603

Harper, Jennie. Food and Nutrition Department, Southern Illinois University, Carbondale 62901

Kennedy, Dorothy C. 1350 N. Lake Shore Drive, Chicago 60610

Kimble, Elverta M. 801 E. 89th Place, Chicago 60619

Lane, Diane. Child Nutrition Programs, Food and Nutrition Service, U.S. Department of Agriculture, 536 S. Clark Street, Chicago 60605

Mason, Helen. 5428 South Drexel Avenue, Chicago 60605 (Homemaker Service, Cook County Department of Public Aid)

McAfee, Donald. National Dairy Council, 111 North Canal Street, Chicago 60606

Parker, Julia B. 400 E. 33rd Street, Chicago 60616

Pianca, Mildred H. Director of Food Services, Elgin Board of Education, 4 South Gifford, Elgin 60120

Semrow, Ellen H. Director, Nutrition Education, American Institute of Baking, 400 E. Ontario Street, Chicago 60611

Spitze, Hazel Taylor. Associate Professor, Home Economics Education, College of Education, University of Illinois, Urbana 61801 (Speaker)

ILLINOIS—Continued

Stine, J. Bryan. Kraft Foods Division, Kraftco Corporation, 500 Peshtigo Court, Chicago 60690

Taif, Betty. Chicago Board of Health, Civic Center LL117-Nutrition Section, Chicago 60602

Taylor, Lillie J. Home Economist, Midwest Region, Food and Nutrition Service, U.S. Department of Agriculture, 536 S. Clark Street, Chicago 60605

Thompson, John E. Thompson Farms Company, 1440 W 47th Street, Chicago 60609

Ugelow, Ethel I. Cook County Department of Public Aid, 318 W. Adams Street, Chicago 60606

INDIANA

Allen, Marcile. Rm. B29 HADM, Purdue University, Lafayette 47907

Burnett, Hazel. Executive Director, Dairy Council of St. Joseph Valley, Inc., 306 South Bend Ave., South Bend 46622

Erickson, Martha A. 3102 Robinhood Lane, South Bend Community School Corporation, South Bend 46614

Goossens, Lilyan M. 3413 Ashley Lane D, Indianapolis 46224

Harker, Charlotte S. Department of Home Economics, Indiana State University, Terre Haute 47809

Schlicker, Sandra. 210 Home Economics Administration, Purdue University, West Lafayette 47907

IOWA

Mairs, Pauline. Extension Nutritionist, B8, Curtiss, Iowa State University, Ames 50010

Roderuck, Charlotte E. Food and Nutrition Department, Iowa State University, Ames 50010

KANSAS

Atkinson, Daisy E. Umberger Hall, Kansas State University, Manhattan 66502

Gammon, Rosemary. Board of Education, 625 Minnesota, Kansas City 66101

Mollner, Carol. Department of Dietetics and Nutrition, University of Kansas Medical Center, Kansas City 66103

Wakefield, Lucille. Justin Hall, Kansas State University, Manhattan 66502

KENTUCKY

Burrier, Sue W. 120 Erikson Hall, University of Kentucky, Lexington 40506

Cheaney, Ora Mae. 309 Cold Harbor Drive, Frankfort 40601 (Kentucky State College)

Collier, Martine. 3411 Rowena Road, Louisville 40218

Dotson, Harriet. Nutrition Program, 275 East Main Street, State Health Department, Frankfort 40601

LOUISIANA

Harper, Sarah M. Department of Food and Nutrition, Southern University, Baton Rouge 70813

Linder, Diane B. Louisiana Cooperative Extension Service, Louisiana State University, Baton Rouge 70816

LOUISIANA—Continued

Metzinger, Ann B. Assistant Professor of Nutrition, School of Public Health and Tropical Medicine, Tulane University, 1430 Tulane Avenue, New Orleans 70112

Sylvester, Judith. Training Coordinator, Louisiana State Department of Health, Home Address: 1328 Jefferson Avenue, New Orleans 70115

Turner, Irene M. Specialist (Nutrition), Knapp Hall, Louisiana State University, Baton Rouge 70803

Whiteside, Josephene Simpson. Consumer Specialist, Department of Health, Education, and Welfare, Food and Drug Administration, Room 222, U.S. Custom House, 423 Canal Street, New Orleans 70130

Yeldell, Alice. 303 South Acadian, Baton Rouge 70806

MAINE

Gushee, Nellie I. 25 Merill Hall, University of Maine, Orono 04473

MARYLAND

Blodgett, Deborah Ann. 8429 Baltimore Avenue, College Park 20740 (Youth Panel)

Forbes, Clare. 4536 N. Charles, Baltimore 21210

Forbush, Juli. 7208 Brennon Lane, Chevy Chase 20015

Goodwin, Mary T. Montgomery County Health Department, 611 Rockville Pike, Rockville 20850

Heald, Felix P. Chairman, Department of Pediatrics, University of Maryland Hospital, 22 South Green Street, Baltimore 21201 (Speaker)

Kaste, Diana L. 105880 Cross Fox Lane #E-1, Columbia 21043 (Howard County Health Department), Ellicott City 21043

Loomis, Carol. Public Health Nutritionist, Maryland State Department of Health, 301 W. Preston Street, Baltimore 21212

Maiden, Norma C. Public Health Nutrition Services, Community Pediatric Center, University of Maryland, 412 Redwood Street, Baltimore 21201

Miller, Evelyn. Supervisor of Home Economics Education, Maryland State Department of Education, 600 Wyndhurst Avenue, Baltimore 21210

Sidwell, Virginia. 7402 Radcliffe Drive, College Park 20740

VanZandt, Dorothy P. Food and Nutrition Specialist, Symons Hall, Room 159, University of Maryland, College Park 20742

Zimmerman, Carol A. 312 E. Oliver Street, Baltimore Department of Social Services, Baltimore 21202

MASSACHUSETTS

Callahan, Dorothy L. Massachusetts Department of Education, Bureau of Nutrition Education and School Food Services, 102 Tremont Street, Boston 02111

Collins, Maryellen. Peter Bent Brigham, 721 Hungton Avenue, Boston 02115

Cronan, Marion L. (Homemaking and School Food Services), 35A Grove Street, Chestnut Hill 02167

Dwyer, Johana T. Department of Nutrition, Harvard School of Public Health, 665 Huntington Avenue, Boston 02115

MASSACHUSETTS—Continued

Harsanyi, Yolan L. Consumer Specialist, U.S. Food and Drug Administration, 585 Commercial Street, Boston 02109
Hitchcock, Jacqueline. 9 Norwich Street, Worcester Service Office, Worcester 01608
Patterson, M. Isabel. J.F.K. Federal Building, Maternal and Child Health Services, HSMHA, Department of Health, Education, and Welfare, Boston 02203
Wright, Harriet J. Skinner Hall, University of Massachusetts, Amherst 01002
Valadian, Isabelle. Associate Professor, Maternal and Child Health, Harvard School of Public Health, 55 Shattuch Street, Boston 02115 (Speaker)

MICHIGAN

Byrne, Ann Marie. Detroit Maternity Infant Care Project, 1151 Taylor Street, Building 5, Detroit 48202
Dean, Anita. Room 103, Human Ecology Building, Michigan State University, East Lansing 48823
Heymans, Frances A. Nutrition Section, Michigan Department of Public Health, 3500 N. Logan Street, Lansing 48914
Killigrew, Mary C. Consultant, Food and Nutrition Services, Box 420, Michigan Department of Education, Lansing 48902
Mook, Marilyn, Extension Specialist, Food and Nutrition, 103 Human Ecology, Michigan State University, East Lansing 48823
Morris, Portia M. Associate Professor, Michigan State University, 103 Human Ecology Building, East Lansing 48823
Place, Diane M. U.S. Food and Drug Administration, 1560 E. Jefferson, Detroit 48207

MINNESOTA

Ball, Virginia. 1764 Hampshire, St. Paul Public Schools, St. Paul 55116
Brink, Muriel. Extension Nutritionist, Agricultural Extension Service, University of Minnesota, 42 North Hall, St. Paul 55101
Christopherson, Susan. Nutritionist, St. Paul Public Schools, District Office, 511 Collins, St. Paul 55101
Darling, Mary. Extension Nutritionist, University of Minnesota, Agricultural Extension Service, Extension Home Economics, 33 North Hall, St. Paul 55101
Erkel, Blanche. Food and Drug Administration, 240 Hennepin Avenue, Minneapolis 55401
Lenaburg, Karen. Minnesota Department of Health, 717 SE Delaware, Minneapolis 55440
McFarland, James P. Chairman of the Board, General Mills Incorporated, 9200 Wayzatta Boulevard, Minneapolis 55440 (Speaker)
Templin, Janice K. (Minnesota Department of Education), 1891 Scott Lane, Apartment #203, West St. Paul 55118

MISSISSIPPI

Barber, Nancy. Nutritionist, Mississippi Band of Choctaw Indians, Tribal Office Building, Route 7, Box 21, Philadelphia 39350

MISSISSIPPI—Continued

Carter, Ruth H. 1109 Gautier Street, Moss Point 39563
Kendall, Don F. Tribal Office Building, Route 7, Box 21, Philadelphia 39350
Kimbrough, Ina G. Box 5405 (Mississippi State University), State College 39762
Weaver, Sarah L. Southern Station, Box 35, University of Southern Mississippi, Hattiesburg 39401

MISSOURI

Bradsher, Mildred S. 1900 Vassar, University of Missouri, Columbia 65201
Endres, Jeanette. Nutritionist, Saint Louis University, Department of Pediatrics, Child Development Clinic, 1401 South Grand, St. Louis 63104
Ling, Lyllis. Chief Nutritionist, Children's Mercy Hospital, 24th at Gillham, Kansas City 64108
Mangel, Margaret. Director, School of Home Economics, University of Missouri-Columbia, Columbia 65201
Meyers, Lorena. Consumer Specialist, Food and Drug Administration, 1009 Cherry, Kansas City 64106
Tyler, Laculia E. 4145 Enright Avenue, St. Louis 63108

MONTANA

Munro, Nancy. Nutritionist, Head Start, 120 Takima Drive, Missoula 59801
Pagenkopf, Andrea. Home Economics Research, Montana State University, Bozeman 59715
Stewart, Bill. Box 92, Browning 59417
Woodson, Agnes S. 704 14th Street South, Apt. 4, Great Falls 59405 (Great Falls Public Schools)

NEBRASKA

Fox, Hazel M. 221 Food and Nutrition Building, University of Nebraska, Lincoln 68503
Schwartzkopf, Edward. 2020 Park Avenue, Lincoln 68502

NEW HAMPSHIRE

Goss, Martha. Cooperative Extension Service, University of New Hampshire, Durham 03824

NEW JERSEY

Brown, Myrtle L. Department of Nutrition, Thompson Hall, Rutgers University, New Brunswick 08903
Hallowell, Mollie P. Senior Home Economist, New Jersey Division of Public Welfare, P.O. Box 1627, Trenton 08625
Haymann, Rosemary. 865 Lower Ferry Road, Trenton 08628 (New Jersey State Department of Education)
Jackson, Christine. 248 North 9th Street, Newark 07107 (Essex County Department of Public Welfare)
Johnston, Rosemary K. College of St. Elizabeth, Convent Station 07961
Macauley, Elizabeth A. Home Economist, Co-op Extension Service—4-H, College of Agriculture and Environmental Sciences, Rutgers University, New Brunswick 08903
Munves, Elizabeth. Department of Medicine, New Jersey College of Medicine and Dentistry, 65 Bergen Street, Newark 07107

NEW JERSEY—Continued

Niedermeier, Mary. Bergen County Health Department, 327 E. Ridgewood Avenue, Paramus 07652

Shafer, Lorraine. Executive Director, Dairy Council of Northern New Jersey, 172 Halsted Street, East Orange 07019

Sostman, Edna. Douglass College, Rutgers University, New Brunswick 08903

Waterman, Hannah S. Public Health Nutritionist, Medical Center, 30 Baldwin Avenue, Jersey City 07304

NEW MEXICO

Fisher, Vola. Public Health Service, Indian Hospital, Field Health Office, Cerrillos Road, Santa Fe 87501

Franklin, Ruth Ann. Department of Home Economics, Box 3470, New Mexico State University, Las Cruces 88001

Gillis, Mary Lou. Maternity and Infant Care Project #555, University of New Mexico Medical School, 1111 Stanford Drive, N.E., Albuquerque 87106

McCallum, Grace. Program Director, Dairy Council, Inc., P.O. Box 8572, Albuquerque 87108

Mooring, Sallie J. 410 Washington Avenue, Santa Fe 87501

Snell, Ednell M. 1201 Maderia Drive, S.E., Albuquerque 87108

NEW YORK

Addiss, Luise. 45 Gramercy Park, New York 10010

Baiano, Maryrose J. Director, Community Nutrition Services, Westchester County Department of Health, Rm. 234, County Office Building, White Plains 10601

Caridad, Carlos. The Nestle Company, Inc., 100 Bloomingdale Road, White Plains 10605

Christakis, George. Mt. Sinai, Section of Medicine, 5th and E, 100th Avenue, New York 10029

Collins, Clotella. Nutrition Specialist, Department of Health, Education, and Welfare, 21 Hickory Street, Wyandanch 11798

Cowell, Catherine. Bureau of Nutrition, New York City Health Department, 93 Worth Street, Room 714, New York 10013

Cupp, Leanne E. 23 Haskell Avenue, Suffern 10901 (Speaker)

Davis, Rosalind. 45 Fifth Avenue, New York 10003 (N.E. Region, Food and Nutrition Service, U.S. Department of Agriculture)

Edgar, Esther. Program Officer VTE, Department of Health, Education, and Welfare, Office of Education Region II, 26 Federal Plaza, New York 10007

Eshleman, Ruth. American Heart Association, 44 E. 23rd Street, New York 10010

Fleck, Henrietta. Home Economics Department, New York University, 537 East Building, Washington Square, New York 10003

Frankle, Reva T. Mount Sinai School of Medicine, 19 E. 98th Street, New York 10029

NEW YORK—Continued

Gill, Mary. Consumer Specialist, Food and Drug Administration, 850 Third Avenue, Rm. 700, Brooklyn 11232

Gordon, Judith. Teachers College, Columbia University, Program in Nutrition, New York 10027

Guiney, Marcella Beffa. Dairy Council of Metropolitan New York, 60 East 42nd Street, New York 10017

Helmer, Howard M. Poultry and Egg National Board, 250 W. 57th Street, New York 10019

Hunter, Barbara. National Broiler Council, 551 5th Avenue, New York 10017

Johnson, Jacqueline B. 204 Chauncey Street, Brooklyn 11207

Katz, Marcella. Health Insurance Plan of Greater New York, Director, Nutrition Division, 625 Madison Avenue, New York 10022

Klippstein, Ruth. Department of Human Nutrition and Food, Cornell University, Ithaca 14850

Mapes, Martha C. Department of Human Nutrition and Food, College of Human Ecology, Cornell University, Ithaca 14850

McGovern, Isabel A. Food and Nutrition Service, U.S. Department of Agriculture, 26 Federal Plaza, Rm. 1655, New York 10007

McInerney, Mary T. Regional Public Health Nutritionist, New York State Department of Health, Albany Regional Office, State Office Building Campus-Building #9, Albany 12226

Mirenda, Rose. Chairman, Home Economics Department, Hunter College, 695 Park Avenue, New York 10021

Nahemow, Beatrice. 35 Tennis Court, Brooklyn 11226 (New York City Department of Social Services)

Prendergast, E. Ann. 242 Henry Street, Brooklyn Heights 11201

Preston, Nathalie D. Brooklyn Bureau of Community Service, 285 Schermerhorn Street, Brooklyn 11217

Pye, Orrea F. Teachers College, Columbia University, New York 10027

Reeder, William W. Professor, Department of Rural Sociology, Cornell University, Ithaca 14850 (Speaker)

Sebrell, W. H. Institute of Human Nutrition, Columbia University, 511 West 166th Street, New York City 10032

Short, Sarah. 300 Slocum Hall, Syracuse University, Syracuse 13210

Simko, Margaret. New York University, 537 East Building—Washington Square, New York 10003

Taittonen, Edith. Community Service Society, 105 E. 22nd Street, New York 10010

Winston, James J. National Macaroni Manufacturers Association, 156 Chambers Street, New York 10007

Winston, Mary. American Heart Association, 44 E. 23rd Street, New York 10010

Young, Charlotte M. Savage Hall, Cornell University, Ithaca 14850

NORTH CAROLINA

Bryan, Rebecca Broach. Department of Nutrition, School of Public Health, University of North Carolina, Chapel Hill 27514

Calderoni, Louise E. State Department of Public Instruction, Education Building, Rm. 570, Raleigh 27602

Davis, Betsy B. Route 4, Piney Mount Road, Chapel Hill 27514

Donnelly, Marjorie M. 213 Ricks Hall, North Carolina State University, Raleigh 27607

Fistori, Diane. 213-A Ricks Hall, North Carolina State University, Raleigh 27607

Jones, Ivan D. North Carolina State University, Raleigh 27607

Pinkham, Linda. School Food Services, P.O. Box 12197, Raleigh 27605

Ramseur, Bessie B. P.O. Box 21928, Greensboro 27420 (A & T College of North Carolina)

Schindler, Carolyn. M & I Project 526, Wayne County Health Department, Goldsboro 27530

Selph, Annabelle D. 2502 Winton Road, Durham 27707

NORTH DAKOTA

Johnston, Harriet. Assistant Director, Health Education, North Dakota Regional Medical Program, 1512 Continental Drive, Grand Forks 58233

OHIO

Dolney, Adela D. Department of Nutrition, Case Western Reserve University, 2121 Abington Road, Room 315D, Cleveland 44106

Garvin, Jane H. Department of Home Economics, University of Cincinnati, Cincinnati 45221

Hunscher, Helen A. Department of Nutrition, Case Western Reserve University, Cleveland 44106

Lackey, Helen M. 515 S. Calumet, Educational Center, Lima 45804 (Chairman, The Ohio Nutrition Council)

Thompson, Dorothy E. Nutrition Department, Case Western Reserve University, Cleveland 44106

OKLAHOMA

Dobbins, Frances W. Nutrition Coordinator, School Lunch Division, 4545 Lincoln Boulevard, Suite 160, Oklahoma City 73105 (Speaker)

Dunning, Suzanne O. 821 N. Main #19, Oklahoma State University, Stillwater 74074

McGee, Helen. P.O. Box 10630, Midwest City Public Schools, Midwest City 73110

Townsend, Marjorie. 1700 N. Sooner, Route 4, Oklahoma City 73115 (Dairy Council Inc.)

Trimble, Sue. Director of Food Service, Broken Arrow Public Schools, 117 West Commercial, Broken Arrow 74012

Zahasky, Mary C. Chairman, Department of Nutrition and Dietetics, University of Oklahoma Medical Center, 800 N.E. 13th Street, Oklahoma City 73104

OREGON

Wenzel, Jeta Mae. Public Health Service, Indian Health Area Office, 921 S.W. Washington Street, Portland 97205

PENNSYLVANIA

Buck, Ruth J. 160 Human Development South, University Park 16802

Guthrie, Helen A. 202 Human Development, University Park 16802

Iacone, Mildred A. Home Economics Department, Albright College, Reading 19604

Podgorski, Sophia M. Director, Division of Nutrition, Pennsylvania Department of Health, P.O. Box 90, Harrisburg 17120

Russell, Barbara W. 2013 Sonny Street, Pittsburgh 15221 (Pittsburgh Public Schools)

Temple-West, Patrick F. E. Director, C.C.H.R. Food Program, Archdiocese of Philadelphia, 222 N. 17th Street, Philadelphia 19103

Zoumas, Barry L. P.O. Box 54, Hershey 17033

PUERTO RICO

Acosta de Galletti, Alida. Calle 29, 1897 Fair View, Cupey, Rio Piedras 00926 (University of Puerto Rico)

Quinones-Toyos, Nexy A. AA-39 Margarita Sur, Levittown Lakes, Cataño 00632 (Department of Health)

RHODE ISLAND

McCarthy, M. Constance. Chief, Public Health Nutrition Services, Rhode Island Department of Health, Providence 02908

Mueller, Elizabeth W. Room 20, Woodward Hall, Kingston 02881 (University of Rhode Island)

Perra, Betsey B. Department of SRS, 600 New London Avenue, Cranston 02920

Wait, Ruth B. Rhode Island Department of Health, Division of Health Education, 103 Health Building, Davis Street, Providence 02908

SOUTH CAROLINA

Gaston, Kathleen E. State Director, School Food Service Programs, South Carolina State Department of Education, 305 Rutledge Building, Columbia 29201

Godfrey, Inistore. Director, Division of Nutrition Services, South Carolina State Board of Health, J. Marion Sims Building, Columbia 29201

Hill, Charlene. State College P.O. Box 1532, Orangeburg 29115

Ulmer, Hugh D. Drawer 350, Office of Curriculum and Instruction, Beaufort 29902

SOUTH DAKOTA

Carvell, D. C. "Del". P.O. Box 1, Sisseton 57262

Rust, Elizabeth. Nutrition and Food Sciences Department, College of Home Economics, South Dakota State University, Brookings 57006

TENNESSEE

Adams, Ozie L. Field Services and Extension, Tennessee State University, Nashville 37203

TENNESSEE—Continued

Brannon, Elizabeth. Child Development Center, 711 Jefferson, Memphis 38105

Disney, Gail W. Nutrition Department, College of Home Economics, University of Tennessee, Knoxville 37916

Holten, Beatrice W. Director of Nutrition, Department of Public Health, 405 Capitol Towers, Nashville 37219

Mariner, Marion. Assistant Professor, University of Tennessee, P.O. Box 1071, Knoxville 37901

Rowland, Ann. 3700 Sutherland Avenue, Knoxville 37919 (Speaker)

Yates, Agnes R. Supervisor, Tennessee Department of Education, School Food Services, C-3 303 Cordell Hull Building, Nashville 37219

TEXAS

Alford, Betty B. Box 23564, Texas Womans University, Denton 76204

Allman, Leona. Consumer Specialist, Food and Drug Administration, 3032 Bryan Street, Dallas 75204

Arnett, Cleo. Division of Maternal and Child Health, Texas State Department of Health, 1100 West 49th Street, Austin 78756

Clark, Martha E. Community Health Service, U.S. Public Health Service, 1114 Commerce Street, Dallas 75202

Eppright, Margaret A. Department of Home Economics, The University of Texas at Austin, Austin 78712

Fry, Peggy Crooke. S.W. Medical School, Pediatrics Department, 802 Stemmons Tower North, 2710 Stemmons Freeway, Dallas 75207

Harp, Mary Wanda. Department of Home Economics, Southwest Texas State University, San Marcos 78666

Lamb, Mina W. P.O. Box 4096 Tech Station, Lubbock 79409 (Texas Technological College)

Larson, Lora Beth. 912½ South 8th Street, Edinburg 78539 (Migrant Nutrition Education Project)

Lewis, Burnadine L. Department of Home Economics, Southwest Texas State University, San Marcos 78666

Massey, Radora. Dairy Council, Incorporated, 804 Tirado, Austin 78752

Moore, Ola M. Food and Nutrition Service, U.S. Department of Agriculture, 1100 Commerce Street, Room 5-D-22, Dallas 75201

Nance, Emma B. Regional Home Economist, Food and Nutrition Service, U.S. Department of Agriculture, 1100 Commerce Street, Room 5-D-22, Dallas 75201

Reasonover, Frances L. Extension Service, College Station 77843

Robinson, Nell B. Texas Christian University, 5729 Wimbleton Way, Fort Worth 76133

Ryan, Melbagene. 901 O'Connor Road, Irving 75060 (Irving Public Schools)

Trevino, Elda. 314 S. Closner, P.O. Box 1198, Edinburg 78539 (Hildago County Child Development Program)

TEXAS—Continued

Wallace, Hazel Loyce. Consumer Specialist, Food and Drug Administration, 3032 Bryan Street, Dallas 75204

UTAH

Bardwell, Flora. Utah State University, Logan 84321

Franz, Kay. 2218 SFLC, Brigham Young University, Provo 84601

Hartvigsen, Helen C. 1172 East 27th South, Salt Lake City 84106 (Utah State Board of Education)

VERMONT

Coffey, F. Aline. Terrill Hall, Room 206, University of Vermont, Burlington 05401

Foley, Banba A. Department of Education, Montpelier 05602

VIRGINIA

Broaddus, John T., Jr. Principal, George C. Marshall High School, 7731 Leesburg Pike, Falls Church 22043 (Speaker)

Creamer, Barbara W. Dairy Council, 2112 Spencer Road, Richmond 23230

Devier, Nancye B. Home Economics Education Supervisor, State Department of Education, Richmond 23216

Earl, Lois B. 1330 Warrington Place, Alexandria 22307 (Department of Human Resources, Washington, D.C.)

Gilliam, Virginia R. Supervisor, Home Economics, Administration Building, 800 E. City Hall Avenue, Norfolk 23510 (Norfolk City Schools)

Hodgins, Ann H. Dairy Council of Central and Eastern Virginia, Incorporated, 2112 Spencer Road, Richmond 23230

Honaker, Linda. 500 North Tenth Street, Richmond City Health Department, Richmond 23219

Morris, Laura G. 800 East City Hall Avenue, Norfolk 23510 (Board of Education)

Mullis, Rebecca. Nutrition Consultant, Department of Health, 600 James Madison Building, 109 Governor Street, Richmond 23219

Puett, Reva. 200 Jefferson Street, Radford 24141

Ritchey, S. J. Department of Human Nutrition and Foods, Virginia Polytechnic Institute and State University, Blacksburg 24061

Robbins, Jean. 1419 Crestmoor Drive, S.W., Roanoke 24018

Sampley, Marilyn Y. Radford College, Radford 24141

Tolentino, Gloria H. 1021 Fairlawn Avenue, Virginia Beach 23455

Wentworth, Jane. Department of Human Nutrition and Foods, College of Home Economics, Virginia Polytechnic Institute and State University, Blacksburg 24061

WASHINGTON

Johnson, Mary Louise. 1035 W. Nickerson #11, Seattle 98119 (University of Washington)

WASHINGTON—Continued

Meakin, Eunice A. Nutrition Specialist, 301B Agricultural Science Ph. II, Washington State University, Pullman 99163

Simpson, Ena. 5010 Sage Street, Olympia 98503 (State Department of Public Instruction)

WEST VIRGINIA

Gravenmier, Faith. West Virginia Department of Education, 1900 Washington Street E., Room B–248, Charleston 25305

Jarvis-Eckert, Marilyn A. State Program Leader, Nutrition Education, West Virginia University, 1158 Agricultural Sciences Building, Morgantown 26506

WISCONSIN

Dunn, Charlotte M. Extension Food and Nutrition Specialist, 235 Home Economics Building, University of Wisconsin, Madison 53706

Johnson, Nancy E. 105 Quarterdeck Drive, Madison 53705 (University of Wisconsin)

Kjentvet, Martha S. Chief, Nutrition Section, Wisconsin Division of Health, P.O. Box 309, Madison 53701

McDivitt, Maxine. 211 Johnston Hall, University of Wisconsin-Milwaukee, Milwaukee 53201

McDonald, Bonnie. Professor, School of Home Economics, College of Professional Studies, University of Wisconsin-Stevens Point, Stevens Point 54481

McIntosh, Elaine. Nutritional Science, University of Wisconsin, Green Bay 54305

Voichick, Jane. Extension Nutritionist, 235 Home Economics, University of Wisconsin, Madison 53706

WYOMING

Little, Imelda A. Wyoming Department of Education, Cheyenne 82001

Poolton, Martha A. Head, Division of Home Economics, University of Wyoming, University Station, Box 3354, Laramie 82070

Read, Patricia Ann. Foods and Nutrition Specialist, University of Wyoming, Box 3354, University Station, Laramie 82070

VIRGIN ISLANDS

Postell, Anne J. P.O. Box 166, Kingshill, St. Croix 00840

Wallace, Julia Taylor. Director, Bureau of Nutrition Services, Virgin Islands Department of Health, St. Thomas 00801

Participants From Federal Government Organizations

Alio, Ivan. Peace Corps, Washington, D.C. 20525

Bay, Betty. Extension Service, Room 5408, U.S. Department of Agriculture, Washington, D.C. 20250

Berntson, Byron L. Foreign Economic Development Service, U.S. Department of Agriculture, Room 2117, Auditor Building, Washington, D.C. 20520

Boehne, J. William. Division of Nutrition, Food and Drug Administration, Washington, D.C. 20204

Bosley, Bertlyn. Pan American Health Organization, 525 23rd Street, N.W., Washington, D.C. 20037

Bosserman, Helen. Assistant National Director, Nursing Programs, American National Red Cross, 18th and E Streets, N.W., Washington, D.C. 20006

Bovee, Dorothy L. 5520 Old Mill Road, Alexandria, Virginia 22309 (American Red Cross)

Carroll, Margaret D. 3915 Northampton Street, N.W., Washington, D.C. 20015 (Health Services and Mental Health Administration, Department of Health, Education, and Welfare)

Dean, Margaret C. Food and Nutrition Consultant, American National Red Cross Headquarters, 18th and E Streets, N.W., Washington, D.C. 20006

Demus, Theresa A. Office of Consumer Affairs, Food and Drug Administration, Department of Health, Education, and Welfare, 5600 Fishers Lane, Room 12–64, Rockville, Md. 20852

Dunston, James O. Division of Food Technology, Office of Product Technology, Food and Drug Administration, BF–416, 200 C Street, S.W., Washington, D.C. 20204

Eagles, Juanita. Consumer and Food Economics Research Divison, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building, Hyattsville, Md. 20782

Garner, R. G. Cooperative State Research Service, U.S. Department of Agriculture, Washington, D.C. 20250

Gortner, Willis A. Human Nutrition Research Division, Agricultural Research Service, Agricultural Research Center, U.S. Department of Agriculture, Beltsville, Md. 20705

Harris, Kenneth W. 3509 Morrison Street, N.W., Washington, D.C. 20015 (Office of Consumer Affairs)

Hastings, Kester. American National Red Cross, Eastern Area, 615 N. St. Asaph, Alexandria, Virginia 22314

Hildebrand, Francis E. American National Red Cross Headquarters, 18th and E Streets, N.W., Washington, D.C. 20006

Hildebrand, Hazel. Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building, Hyattsville, Md. 20782

Hill, Mary M. Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building, Hyattsville, Md. 20782

Holmaas, Arthur J. 7017 Aronow Drive, Falls Church, Va. 22042 (Food and Nutrition Service, U.S. Department of Agriculture)

Hurt, Mary Lee. Director of Vocational and Technical Education, U.S. Office of Education, Room 5114, ROB, 7th and D Streets, S.W., Washington, D.C. 20202

Johnson, Evelyn H. Extension Service, Home Economics, U.S. Department of Agriculture, Washington, D.C. 20250

Kelley, Fern S. Program Leader, 4-H Youth, Extension Service, U.S. Department of Agriculture, Washington, D.C. 20250

Kelsay, June L. Human Nutrition Research Division, Agricultural Research Service, U.S. Department of Agriculture, Agricultural Research Center, Beltsville, Md. 20705

Kerr, Rose G. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Market Research and Service Division, U.S. Department of Commerce, P.O. Box 81, College Park, Md. 20740

King, Bertha G. Education Program Specialist, Division of Vocational-Technical Education, U.S. Office of Education, Washington, D.C. 20202

Koenig, Edward H. Assistant Director, Nutrition and Technical Services, Food and Nutrition Service, U.S. Department of Agriculture, Room 556, 500 12th Street, S.W., Washington, D.C. 20250

Lane, Anne B. Consumer Specialist, Public Health Service, Food and Drug Administration, U.S. Department of Health, Education, and Welfare, 900 Madison Avenue, Baltimore, Md. 21201

Leverton, Ruth M. Science Adviser, Office of the Administrator, Agricultural Research Service, U.S. Department of Agriculture, Washington, D.C. 20250 (Speaker)

Lincoln, Anita. Food and Nutrition Service, U.S. Department of Agriculture, 500 12th Street, S.W., Room 571, Washington, D.C. 20250

Lotwin, Gertrude. U.S. Department of Health, Education, and Welfare, Room 4111-S, 330 C Street, S.W., Washington, D.C. 20201

Lowenstein, Frank W. Health Services and Mental Health Administration, U.S. Department of Health, Education, and Welfare, Parklane Building, 5600 Fishers Lane, Rockville, Md. 20852

Manthei, John M. National Youth Director, American National Red Cross Headquarters, 18th and E Streets, N.W., Washington, D.C. 20006

Marshall, Mary W. Human Nutrition Research Division, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Md. 20705

Mason, Karl E. Nutrition Program Director, National Institute of Arthritis and Metabolic Diseases (EP), National Institutes of Health, Department of Health, Education, and Welfare, Bethesda, Md. 20014

Massey, Peggy. 2508 Lakevale Drive, Vienna, Va. 22180 (Farmers Home Administration, U.S. Department of Agriculture)

McCann, Mary B. Foxcroft, Apt. N-9, 6851 Roswell Road, N.E., Atlanta, Ga. 30328

McKigney, John. National Institute of Child Health and Human Development, National Institutes of Health, Building 31, Room 3A25, Bethesda, Md. 20014

Miller, Donald F. BF-125, Division of Nutrition, Food and Drug Administration, 200 C Street, S.W., Washington, D.C. 20204

Moore, Deria Foster. 2637 16th Street, N.W., #307, Washington, D.C. 20009

Moss, Mary Ann. Nutrition and Technical Service, Food and Nutrition Service, U.S. Department of Agriculture, Washington, D.C. 20250

Olson, Helen Ger. Chief, Nutrition and Dietetics Branch, Indian Health Service, Health Service and Mental Health Administration, Department of Health, Education, and Welfare, Parklawn Building, Rockville, Md. 20852

Page, Louise. Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building, Hyattsville, Md. 20782

Pao, Eleanor. Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building, Hyattsville, Md. 20782

Paul, Pauline C. Cooperative State Research Service, U.S. Department of Agriculture, Room 415-W, Administration Building, 14th and Independence Avenue, S.W., Washington, D.C. 20250

Phillips, Margaret G. Nutrition Consultant, Maternal and Child Health Service, Health Services and Mental Health Administration, Public Health Service, U.S. Department of Health, Education, and Welfare, 5600 Fishers Lane, Rockville, Md. 20852

Powers, Margaret A. 3226 Northampton Street, N.W., Washington, D.C. 20015 (Office of Education, Department of Health, Education, and Welfare)

Reid, Jeanne M. Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Building 31, Room 10-A-52, Bethesda, Md. 20014

Rizek, Robert L. Director, Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building, Hyattsville, Md. 20782

Robbins, Gordon. Nutrition Program, Centre for Disease Control, Department of Health, Education, and Welfare, Atlanta, Ga. 30333

Rodriguez, Henry S. Chief, Program Development and Appraisal Branch, Child Nutrition Division, Food and Nutrition Service, U.S. Department of Agriculture, Room 566, 500 12th Street, S.W., Washington, D.C. 20250

Rondeau, Elaine M. U.S. Department of Agriculture, 14th and Independence Avenue, South Building, Washington, D.C. 20250

Rothchild, Sarah S. (Public Health Service), 700 7th Street, S.W., Washington, D.C. 20024

Royal, Gladys W. Cooperative State Research Service, U.S. Department of Agriculture, Room 419-A, Washington, D.C. 20250

Sadow, Sue. Head Start, Office of Child Development, U.S. Department of Health, Education, and Welfare, P.O. Box 1182, Washington, D.C. 20013

Salazar, Angel E. 4211 Walney Road, Chantilly, Va. 22021

Schubert, Earl P. Bureau of Elementary and Secondary Education, Division of Plans and Supplementary Centers, U.S. Office of Education, U.S. Department of Health, Education, and Welfare, ROB #3, 7th and D Streets, S.W., Washington, D.C. 20202

Shoun, Frances N. Maternal and Child Health Service, Department of Health, Education, and Welfare, 5600 Fishers Lane, Rockville, Md. 20852

Sidwell, Virginia. 7402 Radcliffe Drive, College Park, Md. 20740

Sismanidis, Andromache. Nutrition Consultant, Public Health Service, Health Services and Mental Health Administration, Maternal and Child Health Service, U.S. Department of Health, Education, and Welfare, 5600 Fishers Lane, Rockville, Md. 20852

Sklarsky, Sadie B. 1900 S Eads Street, Arlington, Va. 22202

Smith, Charlotte E. Division of Health Resources, Community Health Service, U.S. Public Health Service, Room 7A-42, 5600 Fishers Lane, Parklawn Building, Rockville, Md. 20852

Smith, Marguerite M. Nutrition and Dietetics Branch, Indian Health Service, Parklawn Building, 5600 Fishers Lane, Rockville, Md. 20852

Souders, Helen J. Human Nutrition Research Division, Agricultural Research Service, U.S. Department of Agriculture, Agricultural Research Center, Beltsville, Md. 20705

Spindler, Evelyn B. Extension Service, U.S. Department of Agriculture, Washington, D.C. 20250

Stalker, Doris. Office of Consumer Affairs, Washington, D.C. 20015

Stewart, Alice M. Assistants Payments Administration, Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare, 330 C Street, S.W., Washington, D.C. 20201

Stewart, Margaret R. Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building, Hyattsville, Md. 20782

Thomas, Patricia. Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building, Hyattsville, Md. 20782

Tillotson, Jeanne L. Consultant Dietitian, Office of the Associate Director for Clinical Applications, National Heart Lung Institute, Building 31, Room 1c 08, National Institutes of Health, Bethesda, Md. 20014

Tytla, Elsie M. 5600 Fishers Lane, Rockville, Md. 20852

Walker, Mabel A. Consumer and Food Economics Research Division, Agricultural Research Service, U.S. Department of Agriculture, Federal Center Building, Hyattsville, Md. 20782

Watts, Mary E. Assistant Chief, Medical Social Work Section, Maternal and Child Health Service, Health Service and Mental Health Administration, 5600 Fishers Lane, Room 12A-27, Rockville, Md. 20852

Zukel, Marjorie. National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Westwood Building, Rm. 605, Bethesda, Md. 20014

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